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ABSTRACT

This activities book is used with an early childhood conservation education program. The activities are presented in four color-coded sections, each section representing one of the four seasons. Each activity includes a statement of purpose, list of materials needed, instructional strategies, and a list of supplementary activities. In addition to a table of contents, an index is provided to enable teachers to find activities by topics that are applicable to more than one season. Subject areas in this index are: animals; birds; food chains; hibernation; harvest; insects and spiders; land use; pioneers; plants; pollution; seeds; soil; trees; and weather. The program includes a set of posters (one for each season), with directions for their use provided in this book. The program also includes pictures of 24 Missouri animals and four different habitat types in four seasons. Program resources (including a list of children's books) and introductory comments are included. (JN)

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Conservation Seeds

Activities Book

by
Sherri Griffin

Illustrated by
John Griffin

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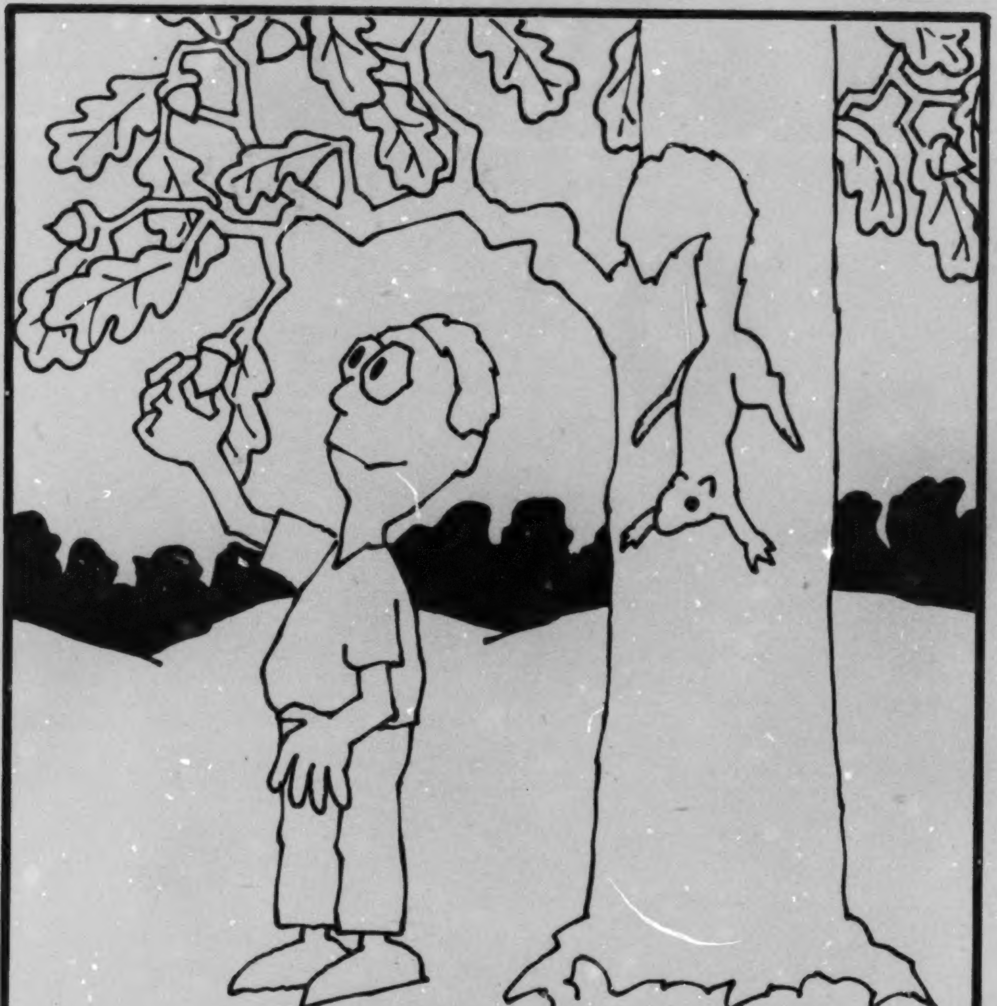

An Early Childhood Conservation Education Program
of the
Missouri Department of Conservation
Conservation Education Unit
Education Section

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The development of *Conservation Seeds* has involved the contributions of many individuals. We are indebted to Director Larry R. Gale and Assistant Director Allen Brohn for their support and encouragement. We are also indebted to Superintendent of Education Donald K. Heard and Assistant Superintendent of Conservation Education Al Palladino for their guidance and assistance.

Conservation Seeds was designed to satisfy a need as identified from survey responses of 1,200 early childhood centers in Missouri. Special thanks to Daniel J. Witter, resource planner, for his assistance with the development and statistical analysis of the survey. Thanks also to those who returned the questionnaire, to those who provided guidance through interviews, and to those who submitted activities for inclusion in the program. A list of contributors is on page 184.

Very special thanks are extended to Sherri Griffin who authored the *Seeds* book, to John Griffin, who provided illustrations and poems for the book, and to David Besenger, whose artistic talents rendered the Season posters and Habitat cards.

We are particularly indebted to David B. Knisley, conservation education consultant, who chaired the Conservation Education Unit's Early Childhood Committee. David's efforts and leadership nurtured the seed of an idea to fruition.

Thanks to Conservation Education consultants Larry Behrens, Neil Jenkins, and Rodney Green. Larry and Neil provided guidance throughout the time that the Early Childhood Committee functioned. Rodney authored the introductions to the four seasons found in the *Seeds* book.

The conservation challenge shou[illegible]oncern all of us, but especially those who build the found[illegible]n for education...the parents and teachers of young child[illegible]. We hope *Conservation Seeds* will help meet that challenge.

INTRODUCTION

Teaching and learning is exciting and fun. The more excited a teacher is about an activity, the more excited and receptive the children will be. This compilation of activities is not just a science reference but a fun way to teach many aspects of conservation to young children. Many teachers will find familiar activities with a new twist. There are also many new, different activities. Teaching from the whole environment has been encouraged wherever possible to give the children every opportunity to grasp a new concept. The important thing to remember in doing these *conservation seeds* is that they are offered merely as "seeds" for ideas. The additional activities that may be generated are limited only by individual imagination. I hope you and the children you care for have as much fun doing these activities as I did writing them. Enjoy yourself!

Sherri Griffin

PURPOSE

Conservation Seeds is a comprehensive early childhood conservation education program. The program is designed to enable teachers of young children to heighten student awareness of nature and conservation. The Missouri Department of Conservation has provided formal assistance to teachers since 1941. Much of that assistance has been directed towards elementary and secondary school teachers. With the growth of formal early childhood education programs, it is appropriate to offer a conservation education program that will serve the needs of early childhood educators and their students. Particularly so, considering the early age that lifetime values and attitudes are formulated. Perhaps Ernest Swift, noted conservation author, said it best many years ago:

> "Conservation education should start with the small child and should relate to his daily living habits to instill in him an awareness of the problems. But above all, conservation education should create a reverant attitude for resources and then a deep sense of individual responsibility will follow."

That is what *Conservation Seeds* is designed to do.

Conservation education comprises all activities and experiences which result in learning about **people's** dependency upon, and use or abuse of, natural resources for their needs and wants. Activities and experiences should emphasize feelings rather than knowledge for 3 to 5 year-old children. The seeds of awareness, of feeling, of caring will grow into knowledge and wisdom if planted with the young child.

Rachael Carson called it the *Sense of Wonder* and authored a book so titled for parents and teachers of young children. Her immortal message encouraged us to make discovery fun and to stimulate the child's natural "sense of wonder." Later, when the child is ready he or she will assimilate the facts that correspond to personal feelings.

ON NATURE STUDY AND CONSERVATION

Nature study is the process of learning about nature, the key often used to generate interest in conservation. Children are intent on discovering the properties of nature. Too often we neglect to see their interest, spoken or silent...that "sense of wonder" that should be cultivated. Teaching any subject demands awareness of student interests and explorations, picking up the cues, and guiding the student's discovery of reality. This is also true of conservation education.

Conservation education is more than nature study; it involves mankind's use of all natural resources: air, water, minerals, land, and all life forms, including people. The term "conservation" is of relatively recent origin but references to conservation ideas and practices are not...some appear in the Old Testament. The classic textbook definition of conservation is: *the WISE USE of natural resources.* Another definition that has much merit was stated by the renowned conservation philosopher, Aldo Leopold. Leopold wrote:

Conservation is a state of harmony between men and the land.

Regardless of the definition used, it is important to realize that conservation is not a subject to be relegated to a certain hour of the school day; but rather, a philosophy of living that reflects a pattern of human behavior with respect to our life-sustaining environment.

There are three levels of conservation effort: preservation restoration and management.

Preservation means saving. It implies little or no use of a resource. There are certain resources—true wilderness, endangered species of plants and animals, small tracts of unique ecosystems, historically important buildings—in which preservation is the only possible method of conservation.

Restoration is the second level of conservation, and is frequently overlooked by many people. Restoration may address the return of worn-out farmland to productivity, the restocking of a wildlife species to an area from which it had been depleted, the replanting of denuded forest land, the grading and seeding of barren strip-mined areas, or the reflooding of a drained waterfowl marsh. Of equal importance, restoration implies a long-term effort to reestablish the **original quality** which once existed in the resource being restored.

Management is the third level of conservation—**management within the conceptual framework of the definitions stated earlier.** It is on the management level that people must make the decisions and implement the practices which determine whether we actually achieve the goals inherent in our definitions.

An example of good resource management at the conservation level is a field which produces an excellent crop harvest year-after-year without loss of soil fertility and scant soil erosion. Other examples include rangeland which sustains continual livestock grazing without loss of forage diversity and quality; wildlife habitat which supports a high density and variety of animal populations; and an urban factory which discharges no pollutants into the air or water.

There are many examples of management at a conservation level; but unfortunately, there are even more examples of mismanagement. "Environmental problems" are usually a result of mismanagement, apathy, ignorance or a combination thereof.

The following list of conservation concepts summarizes the practice and definition of conservation. The activities in *Conservation Seeds* have been designed to provide experiences that relate to these concepts while avoiding their philosophical sophistication.

CONSERVATION CONCEPTS

1. Conservation must involve people; only people can conserve.
2. Conservation is using natural resources so that we will have them to use, now and for future generations.
3. Conservation may involve preservation, restoration and management.
4. In the long-term, conservation practices pay off economically.
5. Natural resources are those things taken from nature (renewable and nonrenewable) to supply our wants and needs.
6. Renewable resources require space and time for their renewability.
7. Management is a conservation tool. Because of demands on all resources, management techniques must be used to extend the availability of nonrenewable resources and to assure the continuous availability of renewable resources.
8. Each resource must be considered separately to best determine the level of wisest use which may range from strict preservation to maximum sustainable use.
9. Resources may be depleted by wasteful use, or increased demand due to increased living standards and/or human population growth.
10. The prosperity and welfare of a nation is dependent upon its resource base. Depletion of the resource base has been an important factor in the decline of many cultures of the past.
11. People are subject to the same natural laws that apply to all living things.
12. An understanding of the laws of nature will better enable us to use natural resources intelligently through the application of ecological principles.

ON COMPONENTS OF THE SEEDS PROGRAM

POSTERS

The "Conservation Seeds" Program has been designed with a seasonal approach. Posters that highlight each of the four seasons are included as teaching aids. Poster guidelines follow each "Outdoors in Missouri" seasonal introduction. Each of the seasonal posters depicts not only a season, but also human activities that are resource dependent. The activities illustrated are ones that youngsters can easily associate with the appropriate season.

EDITORIAL NOTE:
The "Outdoors in Missouri" posters for Spring, Summer, Winter, and Fall have not been included for filming by EDRS.

EDITORIAL NOTE:
The animal and habitat cards have not been included for filming by EDRS.

The Season posters also portray various examples of land use. Major land use patterns depicted include agricultural-fall, residential-winter, forest-spring, and urban-summer. The posters will provide interesting comparisons of human activities, land-use patterns, wildlife habitat types, and seasonal differences which should prove useful throughout the year.

ACTIVITIES BOOK

The activities book is also designed to be used with a seasonal emphasis. Activities are arranged by season and are preceded by "Outdoors in Missouri," an introduction to each season. We encourage teachers to review each seasonal introduction to increase their own knowledge and enjoyment of "Outdoors in Missouri."

The activities are designed to provide interesting and enjoyable experiences that will heighten the child's awareness of nature and conservation. The book is in loose-leaf format so you can add your own activities in appropriate places or remove an activity for copying (thermal ditto or photo copy) to give to parents as an "at home" activity. Activity pages are color-coded for convenient reference by season. In addition to the table of contents, an index is provided which will enable you to find activities by topics that are applicable to more than one season.

ANIMAL & HABITAT CARDS

Pictures of 24 Missouri animals and four different habitat types in four seasons are also provided. Several activities in the booklet call for use of the animal pictures. You may want to devise many additional sorting and matching activities with the animal pictures. Which animals would live in which habitat type? Why or why not? Does the situation change through the year? Which animals migrate? Hibernate? etc. The animal and habitat pictures are provided in sheet form and should be cut apart for use. We encourage you to laminate them for durability.

OTHER RESOURCES

Several resource books have been listed in the appendix. We encourage you to review each of them to enhance your conservation and nature awareness program. All of the books listed have been used successfully by many early childhood educators.

Also, several story books have been listed that are considered appropriate. These books can be purchased from the publisher but most are available from public libraries.

EARLY CHILDHOOD REQUEST SHEET

An early childhood publications request sheet has been included in the appendix. The publications listed will enable you to enhance your nature and conservation awareness program. The publications are for teacher reference and the title generally describes the contents. You will receive a new request sheet each time you request materials.

ON TEACHING CONSERVATION

Effective conservation instruction is a challenging task, and a very rewarding one. It is especially challenging when dealing with very young children. Young children can be "turned off" by too many abstract thoughts and frightened by doomsday prophecies. Yet it is at this young age that lifetime attitudes are formed. This dilemma is perhaps best solved by following the guidelines set forth in a manual available from the Education Section of the Department of Conservation. The manual is free and is titled *An Ecological Approach to Conservation Education*. The manual provides a variety of specific suggestions for dealing with a wide age range of students, but three conservation education goals are emphasized that are important regardless of the children's age.

1. **Set a good example in your own use of resources.** This is sometimes very difficult but actions do speak louder than words...especially to young children.

2. **Provide experiences which will enable youngsters to observe both good and poor examples of resource use.** Providing discovery experiences about nature and conservation is critical to effective learning with young children. This is perhaps how best to cultivate that "sense of wonder." Keep them discovering and avoid long verbal treatments of philosophy. There is plenty of time for that later—when minds are more mature and receptive.

3. **Provide accurate and factual information about resource use and abuse.** *Conservation Seeds* and other Department of Conservation publications will help in this endeavor. Several other resources are listed elsewhere in the *Seeds* booklet. Children deserve to know that rabbits don't watch TV from a recliner while munching a carrot. They also deserve to discover that renewable resources can be "managed" on a sustained yield basis. The task will one day be theirs.

ON SEEKING ASSISTANCE

Conservation education consultants are stationed throughout the state to assist you. If you need assistance, contact the consultant in your area or the Conservation Education Unit, Missouri Department of Conservation, P.O. Box 180, Jefferson City, Missouri 65102.

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OUTDOORS IN MISSOURI—FALL

The hot sultry days of late summer subtly merge into September. Yellow buses loading and unloading, halls echoing to the sounds of many footsteps and happy young voices renewing friendships after a summer apart signal the return to school and the arrival of the ninth month.

As the sun continues its southerly movement we have fewer hours of daylight. In the fleeting days of summer, many Missourians take to the outdoors, picnicking, fishing, bird watching, boating or leisurely walking through prairie or forest.

Other outdoor enthusiasts trade fishing gear for their favorite shotgun or rifle. Dedicated sportsmen, men and women alike, hunt the elusive mourning dove and fox and gray squirrel.

National Hunting and Fishing Day celebrations are held throughout the state and nation in September. Missourians who hunt and fish were in the forefront of the environmental movement, advocating pure air, clean water and habitat preservation.

In September, most animal species are at their population peaks. The young of birds and small mammals like mice and rabbits have matured. They eat plants or insects that eat plants, and in turn are preyed upon by large predators such as hawks and coyotes. They make their homes in dense plant growth that offers protection from predators.

By September most plants have produced mature fruit containing seeds. While providing food for many animals now, these seeds also will furnish winter sustenance for deer, wild turkeys, squirrels, song birds and other wildlife. Missouri Department of Conservation foresters survey oak and hickory mast (nut) production this month. From this count, they can estimate next year's squirrel population, because squirrel numbers usually depend on mast abundance.

At this time each year, birds (especially songbirds and doves) start their seasonal migration south to a warmer climate. Soil microbes and insects produce eggs or young in late-summer flurry of activity.

People energetically engage in the last outdoor activities of the waning warm-weather season in October—adding one more coat of paint on the shed, taking a fishing trip to a local pond, going on a picnic, gathering a load of firewood for winter warmth. Then cool days turn frosty.

Fall is a time of harvest. Farmers with large red, blue and green machines work from dawn to dusk, harvesting crops while good weather holds. The concerned farmer leaves a bit of grain unharvested to help wildlife through the winter.

In early fall, deciduous trees become a blaze of orange, red and gold as cooler temperatures and fewer daylight hours cause chemical changes in their leaves. More severe frosts and strong breezes later in October will carry the flashy leaves to the ground where they eventually will decompose.

Soil microbes move deeper in the soil as temperatures become cooler. Water in impoundments cools; crappie and bass actively feed while channel catfish become less active.

Birds and mammals feed heavily on nuts and other autumn foods. Ducks and geese migrating from nesting sites in the north stop in Missouri to rest and eat; some stay through the winter, others continue their migration. Hibernating species such as woodchucks and ground squirrels put on heavy layers of fat. Tree squirrels, which do not hibernate, often bury nuts in the October ground.

Missouri's fall turkey season opens in October, and waterfowl hunters with decoys and calls move into blinds for the opening of waterfowl season.

November's colder temperatures cause plants to become dormant. Pruning trees and shrubs during this resting stage can improve their appearance and prepare them for healthy spring growth without damage to the plants. In rural areas, people can make brush piles with discarded branches and twigs to furnish winter cover for rabbits and other wildlife.

In November wildlife born in the spring are full-grown. Animals that hibernate are in their winter homes—snakes deep in rock crevices, wrapped into balls with others of their kind; frogs in underwater mud; woodchucks in grass-lined dens.

Freezing temperatures and harvest already have reduced wildlife habitat (food and cover). As winter goes on, the carrying capacity of the land (number of wildlife the land can support) will decrease even more. When wildlife numbers exceed the winter carrying capacity of the habitat, some animals die from starvation, disease or exposure. Fall hunting seasons reduce the number of animals which will compete for winter food. The Missouri Department of Conservation monitors game animals and sets hunting seasons and limits so an optimum number of wildlife will live through the winter and reproduce in the spring.

The Department also encourages landowners to increase the carrying capacity of their land by planting food plots and edge cover. Plants from the Department of Conservation nursery are available for this purpose. The Department takes orders in November for spring distribution.

Most hunting seasons are open in November or soon will be. Quail, rabbit, waterfowl and wild turkey are favorites; but more people hunt deer than any other Missouri game animal. More than a quarter of a million hunters take to the field during the deer season.

Hunters are almost the only predators of Missouri deer; most natural predators no longer live here. Regulated hunting removes surplus deer and helps keep the herd healthy.

Water temperatures drop further in November and most aquatic life, including fish, becomes sluggish. Growth of aquatic vegetation slows; some plants become dormant.

November is a time to pause and give thanks for the blessings our land provides before we get caught up in the excitement of December...Outdoors in Missouri.

POSTER GUIDELINES

The fall poster is designed to emphasize the harvest concept with an agricultural land use pattern. Several aspects of desirable wildlife habitat are shown that include woods, fence rows and crop residue in the field.

The human activities of "harvest" include the woodcutter, the rabbit hunters, and the farmer harvesting corn. All are harvesting renewable resources that will, with man's help, again be plentiful in yet another fall season.

The poster will be useful to compare with other posters throughout the year. Comparisons of contrasting land use patterns, examples of wildlife habitat, and human activities can be made...Outdoors in Missouri.

WHAT CAN YOU SEE?

DID YOU KNOW? There are lots of things going on around us that go unnoticed everyday. This activity will help children become aware of the world around them. It will also help them understand the different ways man uses the land.

YOU'LL NEED: A large collecting bag, an instant camera and film (optional), a large piece of paper attached to the wall, crayons, scissors, glue, magazines and tape.

WHAT TO DO: Gather children in a group and tell them that there are lots of important things going on around us every day that we don't notice. Tell them that you're going for a walk to see what kind of things you can find. Take a walk around the block and pick up things to remind you of what you saw, such as: flower petals, rocks, trash, nuts, leaves, etc. Take pictures of things that you can't take back to the classroom. Point out things the children might miss like stores, telephone poles, electric wires, cars, trucks, garbage cans, houses, trains or airplanes, streets, sewers, fireplugs, clouds, sun, etc.

Back in the classroom help the children recreate what they saw by constructing a mural on the wall. Discuss each item as they put it up. Ask if it is living or nonliving. If it is living, is it plant or animal? Let the children draw or cut out pictures of what they saw but were unable to bring back with them. Discuss the different uses of the land that you saw. Look at the four season posters and find the one most similar to the things you saw. Talk about the other ways man uses the land that you didn't see on your walk. What was in the area before man began to use it? What could the land be used for if none of these things were here?

SUPPLEMENTARY ACTIVITIES:

1. Build houses and neighborhoods in the block area. Use green paper for grass, straws and twigs stuck in clay for trees and telephone poles, spools for fire plugs, etc.
2. Put out dramatic play props in the housekeeping area for the types of stores or community helpers you saw, for example: grocery store, flower shop, policeman, bricklayer, etc.
3. Make collages with pictures of the different things the children saw on their walk.
4. Visit other types of land use areas and compare what you see, for example: visit a farm, park, wildlife area and downtown shopping area. Discuss the different ways man uses the land in each one.

WHY DO WE NEED TREES?

DID YOU KNOW? Trees help man in many different ways. They provide shade, homes for animals, oxygen for people and animals to breathe, food for people and animals and wood to make things and keep people warm. This activity will help children become more aware of the importance of trees.

YOU'LL NEED: A sunny day, animal cards of animals that live in trees and examples or pictures of fruits and nuts.

WHAT TO DO: Take the children outside and sit in the shade of a tree. Ask them where they go when they're playing outside and get too warm. Discuss how the leaves make shadows or shade on the ground. Take the group out in the sun to feel the heat and back in the shade to feel the coolness. Ask the children what lives in the trees. Have the animal cards ready so you can show them the animal as they name it. Talk about birds, bugs, squirrels, raccoons, etc. Which of these animals live in the trees in the play yard? Have the children take a deep breath. Discuss how tree leaves help to make oxygen in the air. People and animals need oxygen to live. Have the children identify various fruits and nuts that come from trees. Talk about how this provides food for people and animals. Discuss how people make things from wood. Ask the children to name some things that are made of wood. Discuss how people also use wood for heat.

Ask the children to again name all the ways that trees help us. Stress the importance of trees. Choose a nearby tree to adopt. If no tree is available, plant one. Ask the children ways they might help care for it. Some suggestions might include: water it, mulch around its trunk, fertilize it, don't pull on the branches, put bird and squirrel feeders in it, plant flowers under it, etc.

SUPPLEMENTARY ACTIVITIES:

1. Paint over leaf cutouts with yellow paint on dark paper. The yellow paint is the sun and when the leaf is removed, there's shade under it.
2. Put out props for a carpenter and a tree surgeon in the housekeeping area. Also, have fruits and nuts available for the children to play with during the day.
3. Make trees for the block area with twigs and clay.
4. Make puzzles so the children can match the plant with the product; for example: trees and a stack of wood, wheat and flour, cotton and clothing, etc.
5. Set up woodworking activities for the children to experience working with wood. Use real hammers, hand saws, and nails but supervise closely. (A publication entitled *Woodworking for Wildlife* can be ordered from the Missouri Department of Conservation.)
6. Look for bird nests and make some from grass cuttings and twigs. (Note: bird nests should not be disturbed; nests may not be legally possessed.)
7. Sort animal cards according to animals that live in trees and those that live on the ground.
8. Make felt trees for the flannel board and leaves, nuts and fruits that the children can add.
9. Visit an apple orchard.
10. Visit a lumber yard and a furniture factory or store.
11. Read the book *Mr. Tamarin's Trees* by Kathryn Ernst, Crown Publishers, Inc.; New York, NY, 1976, to the children. Mr. Tamarin is tired of raking leaves. He cuts down all his trees and then finds out just how important trees are.

18

HANG ON!

DID YOU KNOW? Trees help hold soil in place and keep it from washing away. This activity will help children understand another value of trees.

YOU'LL NEED: A tub of dirt and water.

WHAT TO DO: Have each child put one hand in a tub of soil. Ask them to pretend that their arms are trees and their hands are tree roots. Together they all make up a forest of trees. The roots of the tree are under the ground and help the tree to eat and drink. Instruct the children to grab a handful of soil and hang on because a big storm is coming and the trees have to hang on tight or they will be blown over. Add water to the tub of soil and let it run off. The water washes some of the soil away but the trees' roots (hands) hold much of the soil in place. Discuss what happens where there are no trees or plants to hold the soil. Tell the story of *The Little Stream*, available from the Missouri Department of Conservation.

SUPPLEMENTARY ACTIVITIES:

1. Look for surface tree roots on the playground.
2. Visit a site where a bulldozer has pushed over trees and examine the exposed roots.
3. Make a puzzle with tree roots, tree trunk and leaves. The children have to put it together in the correct order.
4. Discuss the importance of leaves:
   a. on the trees—help make tree food
   b. on the ground—soften the impact of rain on the soil and add fertilizer

DO TREES GET DRINKS?

DID YOU KNOW? Trees get water from the ground through their roots. The water travels up "tubes" in the tree all the way to the top branches. If there isn't enough water, the tree will die. This activity will help children see how moisture moves up the tree.

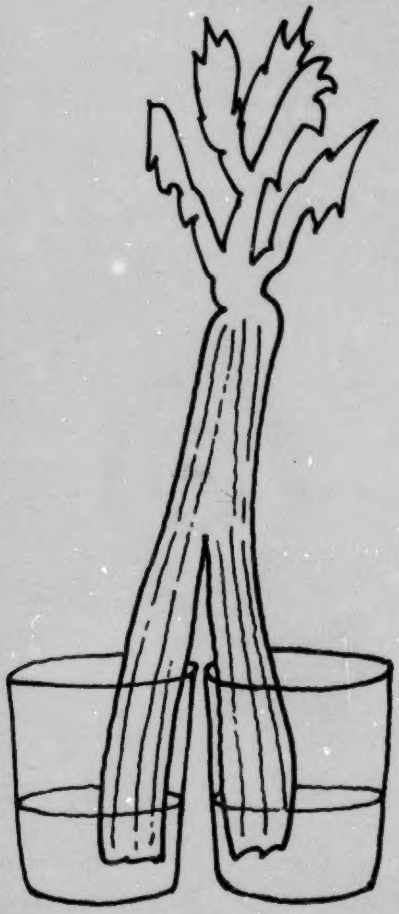
YOU'LL NEED: A knife, celery stalk (with leaves), 2 glasses or jars, 2 colors of food coloring and a spoon.

WHAT TO DO: Ask the children if they know how a tree gets a drink. Explain the process to them and discuss how this activity will show it.

Trim away the bottom part of the celery stalk and slice halfway through the center of the celery stalk. Fill the two jars about three-quarters full of water and add enough food coloring to make a dark solution. Put the two jars next to each other and place the celery stalk so it has a cut end in the water in each jar. It takes several hours for the dye to travel through the celery so do this activity just before the children go home for the day. The celery will be beautifully colored by the next morning.

SUPPLEMENTARY ACTIVITIES:

1. Add a "control" to the above experiment by placing a trimmed stalk of celery (with leaves) in a dry jar. Notice the wilted leaves.
2. Soak leaves in water for an hour and discuss how the veins stick out. Compare them to the veins on the children's hands.



EVERYTHING NEEDS SOMETHING

DID YOU KNOW? All animals eat plants or other animals. Plants are nourished by animal and plant remains. This story illustrates one way that animals are dependent on each other.

YOU'LL NEED: Felt characters and a flannel board.

WHAT TO DO: Read the children the following poem.

Once there was a big tree.
He grew up from the ground.
Every fall his green leaves
would all turn brown.

Soon a wind would blow
and the leaves would fall down
to cover up the grass
that was down on the ground.

Along came some small bugs,
crawling on the ground.
They saw all the leaves and said
"Look what we have found!"

They ate the leaves for breakfast,
and they ate the leaves for lunch.
They chomped on the leaves.
Munch, Munch, Munch.

Along came a spider
underneath the tree.
A very hungry spider
to see what he could see.

He spun a web on the leaves.
He caught the bugs to eat.
And as he chomped them down
he said "What a tasty treat!"

Along came a turkey,
scratching at the ground.
The turkey saw the spider
and chomped him right down.

"Ummm!" said the turkey,
"What a tasty bite."
And flew up into the tree,
where he spent the night.

(The Next Morning)

Along came a hunter,
walking all around.
Boom went his gun
and the turkey fell down.

"Umm!" said the hunter,
"What a tasty treat!"
He picked up the turkey
and took him home to eat.

Underneath the big tree
the leaves slowly rot.
They melt into the ground
where they help the tree a lot.

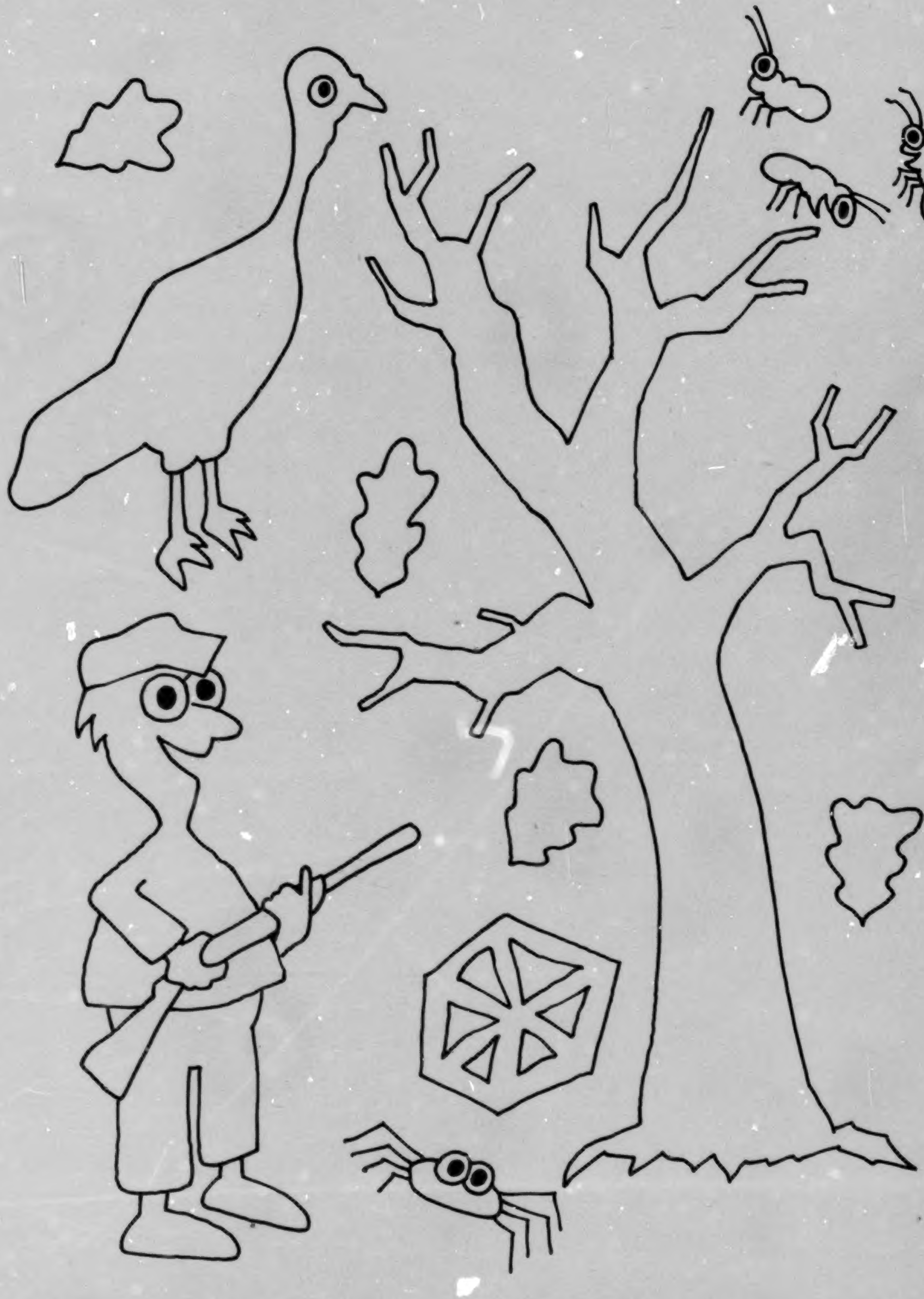
The tree roots use the goodies
that the melted leaves bring
and feed the tree so it can make
green leaves in the spring.

By John Griffin

SUPPLEMENTARY ACTIVITIES:

1. Let the children act out the story.
2. Look at the animal cards and discuss what each animal eats.
3. Discuss fishermen in summer poster, rabbit hunters in the fall poster.

EVERYTHING NEEDS SOMETHING



TREE SKIN

DID YOU KNOW? Trees can be identified by their bark. Trees like the persimmon have rough, bumpy bark, while the sweetgum and others have smooth bark. The booklets *Conservation Trees and Shrubs for Missouri* and *Missouri Trees,* available from the Missouri Department of Conservation, can help you identify trees in your neighborhood. This activity will help children realize that tree bark is sensitive and each type of tree has bark with different coloring and texture.

YOU'LL NEED: An outdoor area with several different types of trees, drawing paper and crayons.

WHAT TO DO: Ask the children if they have ever been cut or scratched. Discuss how a cut may bleed and leave a scar. Compare the children's scrapes and cuts to scrapes and cuts on a tree. Sap is a tree's blood. Does it look like the children's blood? Trees can get scars too. See if you can find a tree that has a scar. Talk about how trees should be treated with respect. Lawn mowers frequently cause scars on trees and may permanently damage young trees. Lawn mower scars can be easily observed by children. Proper pruning leaves temporary scars but is necessary for well-shaped trees.

Ask the children if all people's skin is the same. Compare the skin of children of different races in your classroom. Discuss how some trees have "skin" which is different from other trees. Point out different colors and textures of tree bark.

Demonstrate to the children how to make a bark rubbing by placing drawing paper flat on the tree and rubbing it with the flat side of a crayon. Discuss how different trees make different patterns. Let the children make bark rubbings on several different kinds of trees for comparison.

SUPPLEMENTARY ACTIVITIES:

1. Make a poster matching tree rubbings with leaves from the tree.
2. Draw around each child's arm and hand on brown construction paper. Have the child cut out and glue the tree on a piece of light blue construction paper. Then let the children sponge paint autumn colored leaves, fruit and nuts on their tree. This can also be done in the winter with snowflakes, spring with white or pink blossoms and green leaves and summer with green leaves and light green fruit or nuts. Trees seen on the seasonal posters can be used as models.

LEAF PRINTS

DID YOU KNOW? Trees that drop their leaves in the fall and grow new ones in the spring are called "deciduous." (leaf-shedding) This activity will help children to identify "deciduous" trees.

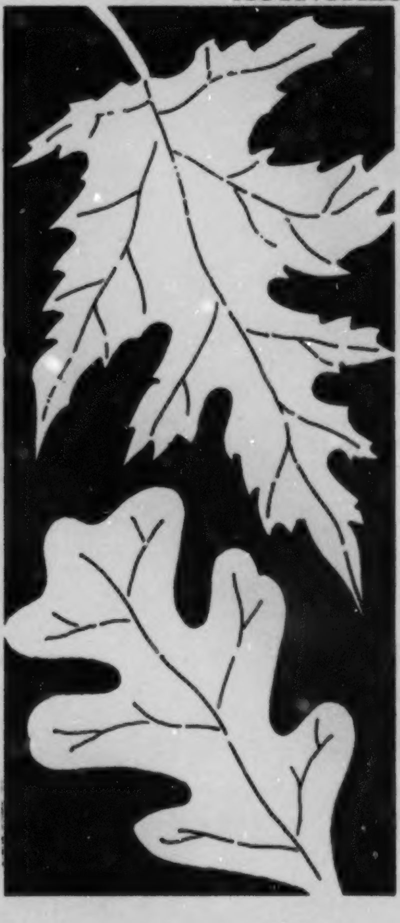
YOU'LL NEED: An area with deciduous and evergreen trees and playdough.

WHAT TO DO: Go outside and point out an evergreen to the children. Ask them what the difference is between that tree or bush and one whose leaves have begun to fall. Compare a sprig of evergreen and a fallen leaf. Discuss how one is alive and the other one is dead. Ask the children if this means that the tree is dead. When will it get new leaves?

Collect leaves from the ground. Have children smash playdough into a flat circle. Press the leaf into the playdough and remove. Discuss the impression. These can be left to dry and hung in the classroom.

SUPPLEMENTARY ACTIVITIES:

1. Make a large chart matching leaves and nuts. Have identical leaves and nuts on a table nearby so the children can match them with those on the chart.
2. Glue leaves on construction paper and cover with clear contact paper for placemats.
3. Rake leaves.
4. Make wet leaf prints on the sidewalks.
5. Set up a scale for the children to weigh leaves, fruit and nuts. Discuss how heavy they are for the tree to support.
6. Make a lotto game with leaves.
7. Cut out leaves from heavy cardboard and punch holes in them. Let the children lace them with yarn for veins.
8. Point out the presence or absence of leaves on the seasonal posters.



NATURE JAR

DID YOU KNOW? The purpose of flowers is seed making. One flower can produce many seeds. Seeds are the plant's way of reproducing itself. This activity will help children learn about different kinds of seeds and their purpose.

YOU'LL NEED: A natural area with lots of trees and weeds and a large, clear jar.

WHAT TO DO: Gather the children together and tell them you are going to make a nature jar. Ask them to gather all the seeds, nuts, and fruits or berries that they can find to put in the jar. Emphasize that *none* of these are for eating and should not be put into their mouths. Be *certain* that children do not collect poison ivy berries. Once your jar is full, dump it out and put all the seeds together that are the same. Tell the children that seeds are how plants have babies. Some seeds come in pods, nuts or fruit. Discuss how the different seeds the children found might be dispersed or scattered. Seeds travel in many different ways. Some float in the air, some have wings, some stick to the feet or fur of animals and some are stored by animals.

SUPPLEMENTARY ACTIVITIES:

1. Display the nature jar in the classroom and let the children dump it out and match the seeds.
2. Eat popcorn, nuts, beans or roasted pumpkin seeds. Discuss how you are eating seeds.
3. Make a seed and leaf collage.
4. Play "what's missing" with several of the different kinds of seeds.

I'M A LITTLE MILKWEED CRADLE

DID YOU KNOW? There are many different ways for seeds to be dispersed or scattered. Frequently the wind helps. This song and activity will help children understand seed dispersal and the role of wind.

YOU'LL NEED: At least one milkweed pod, preferably enough for each child to have one.

WHAT TO DO: Examine a milkweed pod closely. Look at it under a magnifying glass. Open it and examine the seeds. Discuss how the seeds could get to a new place to grow. Have the children throw the seeds up into the air and let the wind catch them.

Teach the children the following song to the tune of *I'm a Little Teapot:*

I'm a little milkweed cradle you see.	(cup hands together)
I have baby seeds in me.	(peek inside)
Open me up and hold me high	(open hands & hold high)
Blow, blow wind and my seeds fly	(blow on hands and wiggle fingers like they're flying)

SUPPLEMENTARY ACTIVITIES:

1. Have children pretend to be seeds and imagine how they would be dispersed.
2. Look for other seeds that travel with the wind on the play yard or in a park.

BABY PLANTS

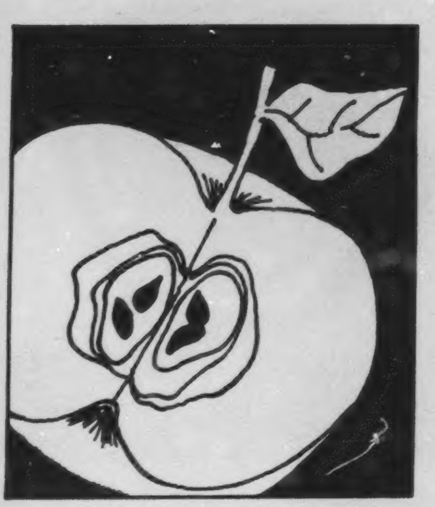
DID YOU KNOW? Each seed houses a tiny little plant, food for the plant and a seed coat to protect it. This activity will help children relate seeds to the plant they produce.

YOU'LL NEED: Several different fruits and vegetables, pictures of the plant or tree that produced them or the whole plant itself.

WHAT TO DO: Tell the children that each seed has a tiny little plant inside with food for the plant. Each different kind of seed will grow a different kind of plant. Cut open an apple. Look at the seeds. Break open an apple seed and examine the inside under a magnifying glass. Discuss how the seed would grow into an apple tree if it were planted. Continue in the same manner with other fruits or vegetables. Discuss which part of the plant people eat. Do people ever eat seeds? *Do not* eat seeds that are not common food items because some are poisonous (including the apple).

SUPPLEMENTARY ACTIVITIES:

1. Use the fruits and vegetables or pieces of them for printing with an ink stamp pad or finger paints.
2. Make a seed chart matching the seeds with pictures of the plant they will produce.
3. Plant the seeds from some of the fruits and vegetables to see if they will grow.
4. Soak pumpkin or squash seeds in water. Open them to see the little plant inside. Point out the stored food for the plant.



LITTLE STOREHOUSES

DID YOU KNOW? Different plants use different methods of storing food that they will later need. Plants we call vegetables store their food in the root, stem, bulbs or leaves. Foods we call fruits are parts of plants that store their seeds in an edible package. This activity will help children learn about the different parts of the plants we eat.

YOU'LL NEED: Several different types of raw fruits and vegetables, such as: a pear, carrot, pumpkin, tomato, bean, ear of corn, bunch of broccoli, lettuce, and onion.

WHAT TO DO: Show the children each of the different fruits and vegetables. If possible, show the plant or a picture of the plant that it grew on. Discuss how each fruit or vegetable grew and which part we eat. Talk about where each plant stores it's food. Is that the part people always eat? Do we ever eat the seeds? Discuss how farmers harvest the food.

SUPPLEMENTARY ACTIVITIES:

1. Use the vegetables to make vegetable soup for lunch or snack. Let the children help.
2. Point out the farmer harvesting his crop in the fall poster.
3. Play Fruit Basket Upset. Sit children in chairs arranged in a circle. Give each child a picture of a fruit or vegetable. You should have several of each and not more than four or five different ones. Call the name of one of the fruits or vegetables and the children holding the pictures of that fruit or vegetable must move to a different seat.

HOW DOES A PUMPKIN GROW?

DID YOU KNOW? Pumpkins grow on a vine near the ground. This activity will give children a better understanding of how pumpkins grow.

YOU'LL NEED: A picture of a pumpkin patch, cotton balls, dry orange tempra paint, green yarn, brown construction paper, glue and paint brushes.

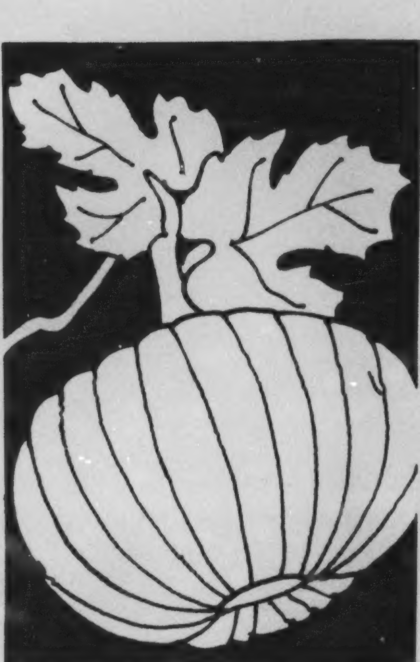
WHAT TO DO: Ask the children if any have ever visited a pumpkin patch. Ask if they know how pumpkins grow. Do they grow on trees? Do they grow underground? Show them the picture of the pumpkin patch. Discuss how pumpkins grow differently from other fruits and vegetables like potatoes or apples but similarly to cucumbers and squash.

Make pumpkin patch pictures. Paint the brown paper with glue. Roll the cotton balls in dry orange tempra paint and stick on the paper. Weave the green yarn around to represent pumpkin vines.

While making the picture, discuss what we do with pumpkins. What's inside them? What can we make to eat from pumpkin? Did pioneers grow them? Discuss how other fruits and vegetables grow.

SUPPLEMENTARY ACTIVITIES:

1. Visit a pumpkin patch.
2. Dye pumpkin seeds with food coloring and 1 teaspoon of vinegar and make a collage.
3. Roast pumpkin seeds for snacks.
4. Make pumpkins with brown paper bags stuffed with shredded newspaper. Twist the top to close. Paint the round part orange and the twisted stem green.
5. Make pumpkin bread, pie, cookies, pudding or just cooked pumpkin.
6. Make a pumpkin bean bag toss by gluing a large poster board pumpkin on the side of a box. Cut out the eyes, nose and mouth like a jack-o-lantern and toss bean bags through the openings.



THE HARVEST

DID YOU KNOW? Every year farmers across Missouri test their soil, plant crops, fertilize them, cultivate them, and harvest them. This story will help give children some understanding of how farmers grow their crops, the types of machinery involved, and what happens to the crops after the harvest.

YOU'LL NEED: Felt characters and a flannel board.

WHAT TO DO: Read the children the following poem.

Farmer Fred went to his field.
He got a little dirt.
The laboratory tested it
before he started work.

The laboratory wrote him.
They said, "Your soil is fine,
But if you want a good corn crop,
add a little lime."

Fred drove his truck and got some lime
as quick as he could go.
He spread it on his corn field
'til the soil was white as snow.

Fred got his plow and tractor
and plowed it like he should.
Then pulled his disc around the field
and mixed the soil real good.

He put seeds in his planter.
You need those to make corn grow.
Straight up and down his tractor went
and planted them in rows.

Farmer Fred went to his house.
And soon the rain and sun
made little corn plants in the field,
The growing had begun.

Each day the plants got bigger.
They all grew straight and green.
Very soon small ears
of corn could be seen.

The ears were wrapped in green leaves.
Inside them corn will grow.
There were ears on every plant,
in every single row.

Soon the plants were very tall,
The growing up was done.
All the leaves on every plant
turned brown in the sun.

The corn plants all died,
but they didn't fall down.
Each plant stood straight and
    held the ears,
High off the ground.

Farmer Fred looked at his field.
"It's time to get to work!"
He jumped into his combine.
It started with a jerk.

Down the rows the combine went.
Click, click, the corn came down.
The plants went through the combine
and out onto the ground.

Clack, clack went the combine.
It scraped seeds off every ear.
Up a pipe the seeds went
to a big box in the rear.

Farmer Fred took the corn,
he put it in a bin.
When he fed it to the pigs
they'd look at him and grin.

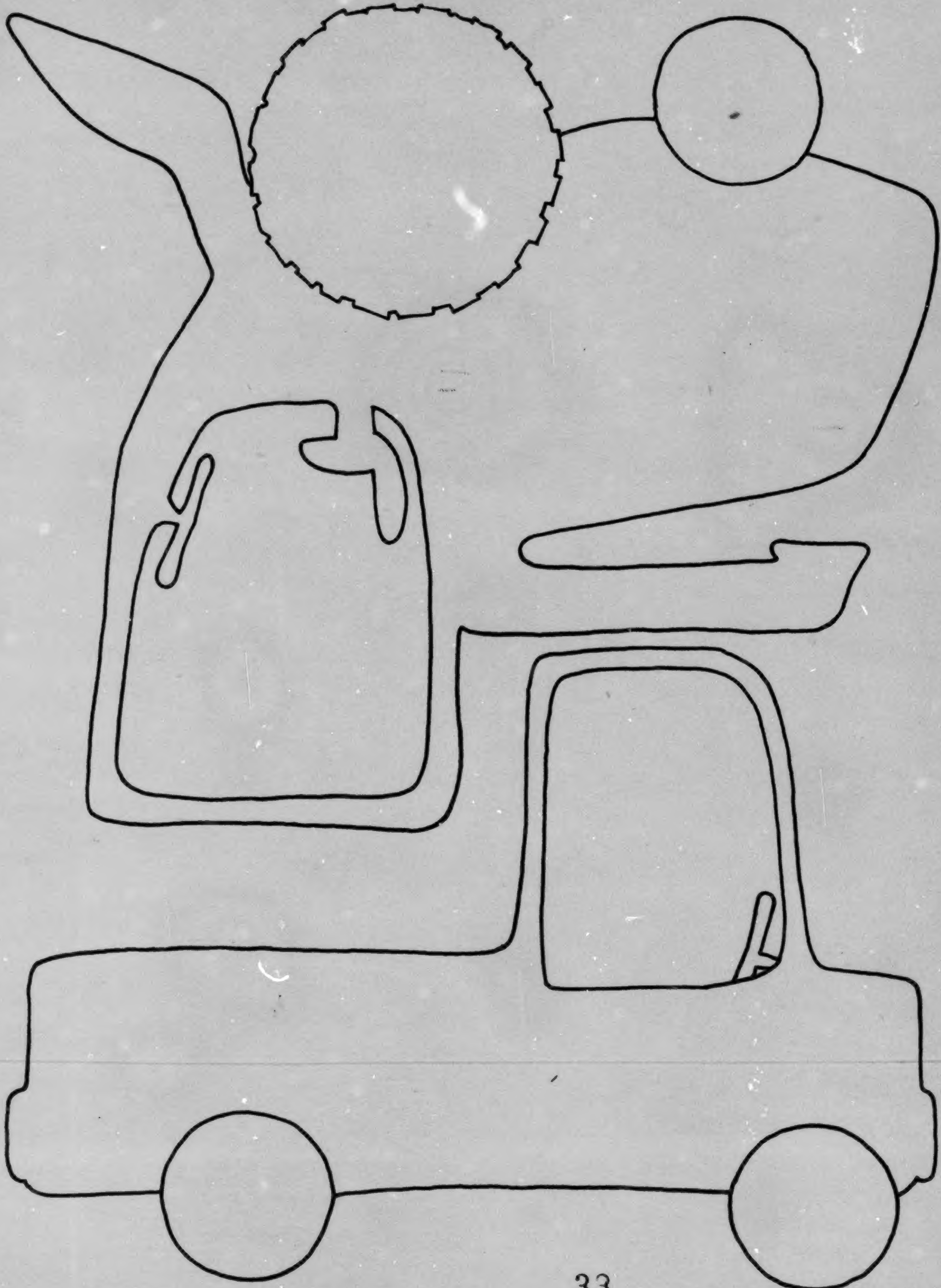
He fed it to his milkcows.
He fed it to his sheep.
And through the long cold winter
they all had corn to eat.

by John Griffin

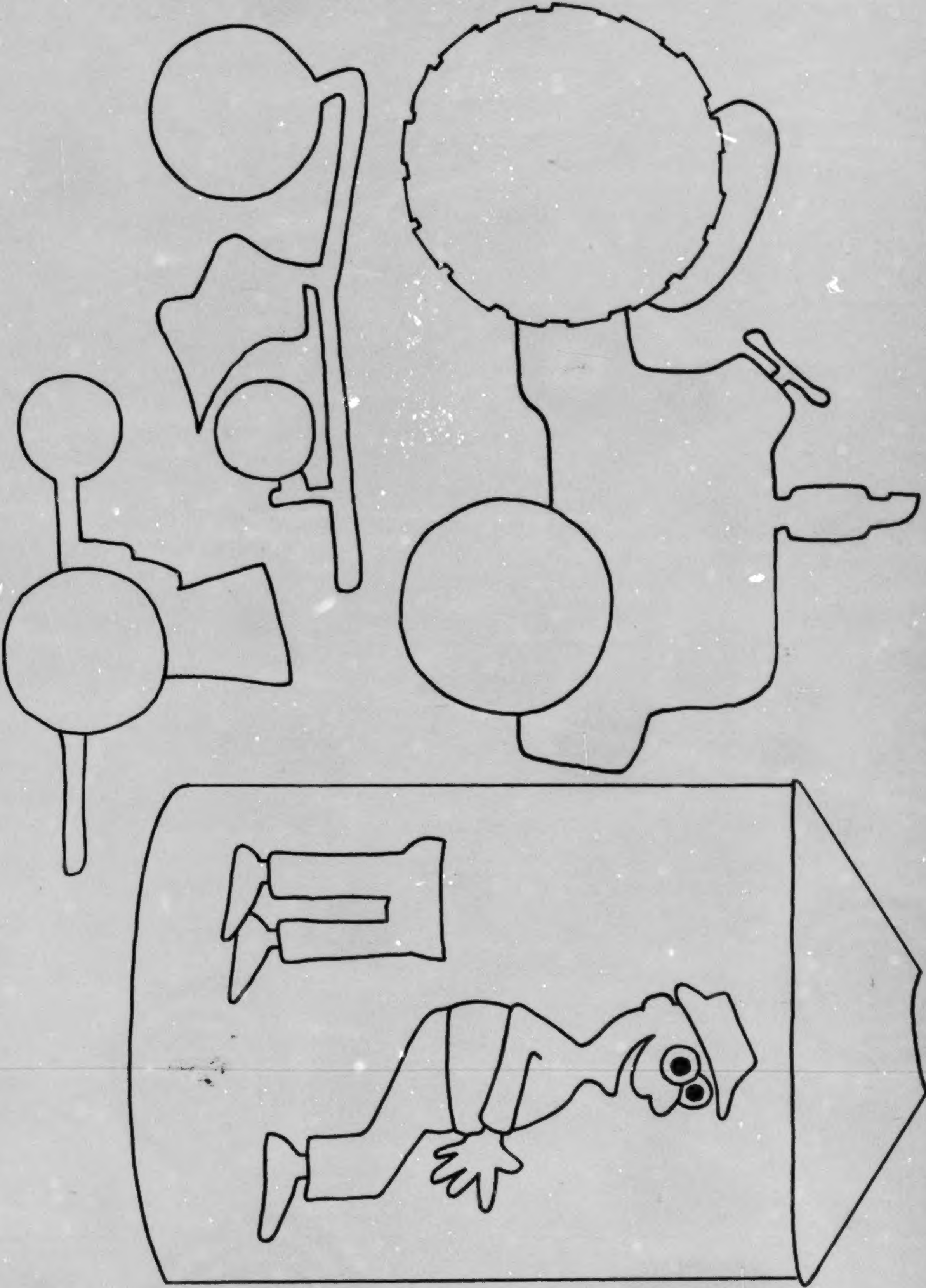
SUPPLEMENTARY ACTIVITIES:

1. Visit a farm implement company.
2. Make food books of all the kinds of food grown in Missouri.
3. Put out overalls, caps, bandannas, etc. in the housekeeping area for the children to pretend to be farmers.
4. In the block area, put out toy farm equipment and use spools or colored vegetables for the children to harvest.
5. Point out farmers harvesting their crops.
6. Point out the "harvest" concepts shown in the fall poster.

THE HARVEST



THE HARVEST



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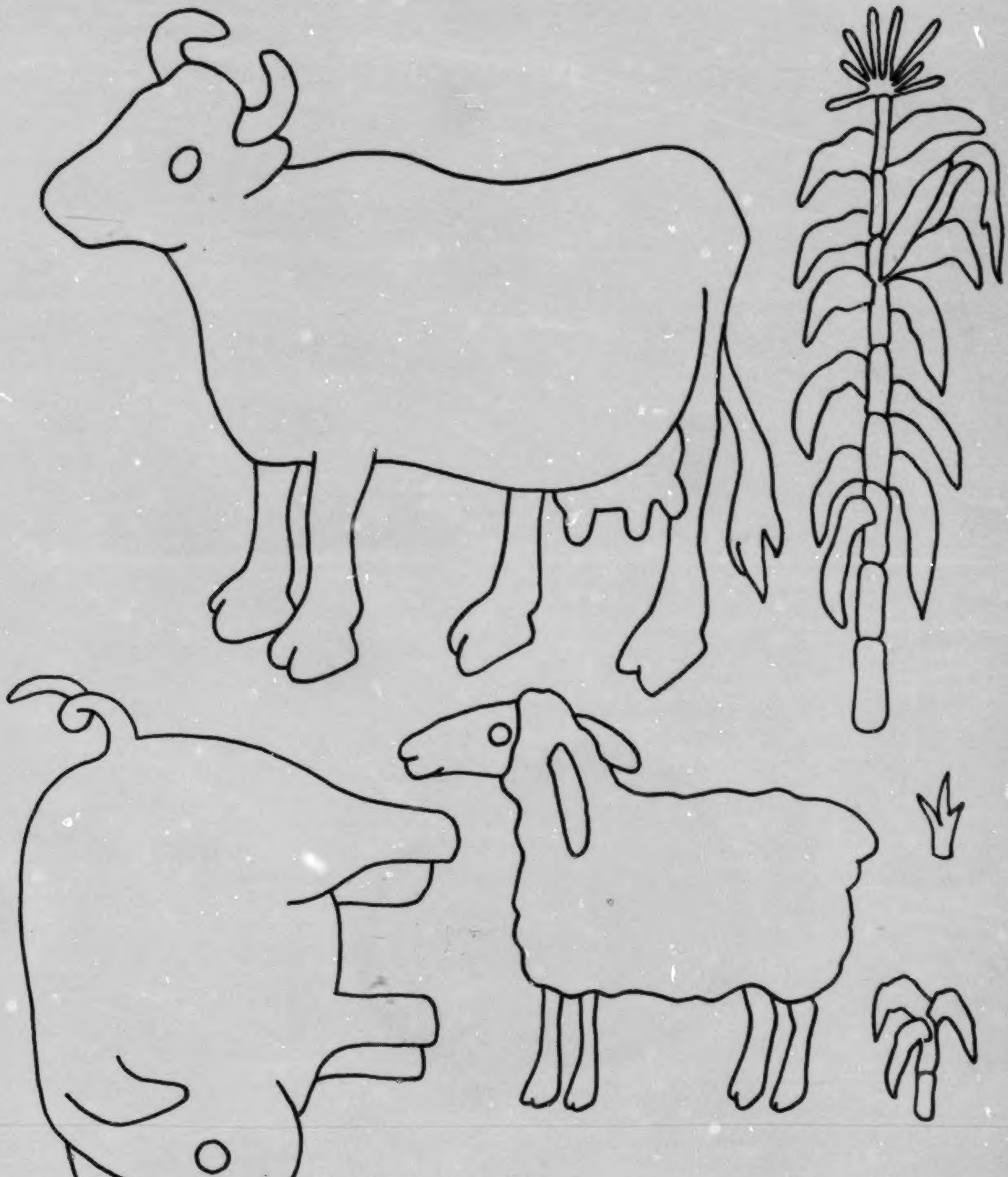

SOMETHING CORNY

DID YOU KNOW? Corn is a plant that stores its food in its seed. Many animals and people like to eat corn. There are several different ways to preserve corn, such as: canning, freezing and drying. This activity will help children understand the different methods of preserving foods.

YOU'LL NEED: Some popcorn, frozen corn, canned corn, cream-style corn, field corn, fresh sweet corn and cornmeal.

WHAT TO DO: Ask the children if they know ways to keep corn good during the winter when it's too cold to grow corn. Talk with them about three different ways to preserve food. Show the children the different types of corn you have brought. Explore the resulting taste, size and texture of each method of preservation and compare with fresh corn. Discuss which method is best for people and which is best for farm animals.

SUPPLEMENTARY ACTIVITIES:

1. Make Indian corn print pictures by rolling a piece of Indian corn in paint and then rolling it on paper.
2. Place empty food containers in the housekeeping area from dried, frozen and canned foods.
3. Make popcorn for a snack.
4. Put out cornmeal for the children to pour, measure, sift, etc.
5. Make "Johnny cakes" by mixing cornmeal and water together and making "patties" to fry. Try them for a snack. Light salting improves the taste.

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ANIMAL HARVEST

DID YOU KNOW? Farmers harvest their farm animals as well as their plants. Many of the foods we eat come from farm animals. This activity will help children identify some of the animal products we get from the farmer.

YOU'LL NEED: Bacon, eggs, milk, electric skillet, mixing bowl, wire whisp or rotary beater, wooden spoon and a pancake turner.

WHAT TO DO: Set up a table in the classroom where the children can watch the bacon frying in the electric skillet without getting too close. Discuss with the children that bacon comes from hogs. Farmers raise baby pigs until they are big and fat. Then they take them to market and sell them so other people can have bacon, ham, pork chops and sausage. This is how some farmers make enough money to buy clothes, a house, toys, etc. Discuss how the bacon changes as it fries and the smell.

Let each child crack an egg into the mixing bowl. Take turns beating the eggs for scrambled eggs. Talk about from where eggs come. Ask the children what else the farmer can do with his chickens besides sell eggs.

Serve milk with the bacon and eggs and talk about from where it comes. What else can a farmer do with his milk? He can make cheese, butter, ice cream, cottage cheese, etc. Ask the children what else the farmer can do with his cows if he doesn't want to milk them. Discuss meat (beef) that people get from cows for hamburgers, steaks, etc. Explain how leather is made from the hides (skins) of cows, pigs, deer, and other animals.

Talk about other animals on the farm and how they help the farmer make a living.

SUPPLEMENTARY ACTIVITIES:

1. Display wool, feathers, honeycomb, wood and leather articles for the children to explore.
2. Let children pretend to be farm animals by eating shredded wheat (like hay bales).
3. Display pictures of various farm products in the housekeeping area. Put out various food props, such as: plastic eggs with insides made of felt, empty milk cartons, mounted cardboard pictures of fried eggs, hamburgers, bacon, etc. Add pails for milking cows and baskets for gathering eggs and farm clothes for dress-up.
4. Make puzzles matching farm animals to their food or clothing products.

5. Use yarn to make a collage and discuss how yarn is made from sheep's wool.
6. Make butter by letting the children shake whipping cream in small jars. It takes about 5 minutes of shaking until it separates. Let the children taste the buttermilk. Wash the butter and add salt. Serve with crackers.
7. During meals and snack times, discuss where the food was grown and harvested.
8. Explain that the rabbit in the fall poster was "harvested" as was the turkey in the *Everything Needs Something* story.
9. Read the book *Charlie Needs A Cloak* by Tomie De Paola, Prentice-Hall; Englewood Cliffs, NJ, 1977, to the children. This story illustrates how a new cloak is made for Charlie from the wool of a sheep.

HABITAT

DID YOU KNOW? A plant's and animal's home is called its habitat. This activity will introduce the concept of habitat to the children. It will also help them understand how plants and animals live in the habitat best suited for them.

YOU'LL NEED: Pictures of the homes of people, animals, and plants and pictures of several different plants and animals. Animal cards will provide some pictures.

WHAT TO DO: Ask the children what they call the place where they live. Tell them that plants and animals have homes too but they are called habitats. Show them the various pictures of the homes of people, plants, and animals and discuss who would live there and why. Talk about why people can't live in a pond, plants can't grow through a concrete street, birds can't live underground, etc. Discuss the special features of each plant or animal that enable it to live in a certain habitat. Talk about ducks and frogs having webbed feet; moles having large, strong claws; woodpeckers having special beaks; and cactus having fleshy, water-storing parts, etc.

Ask the children what else their homes provide besides just shelter. Do children need food, water and protection? Talk about how animals have these things in their habitats. Show the children pictures of various plants and animals and discuss what habitat would be best suited for them and why.

Ask the children what happens when people change a habitat. Where would you go if your house was destroyed to build a highway? What happens when people cut down a forest, burn a field or build a city? Discuss how the use of the land is our choice but we should learn to choose wisely or practice "conservation." If we never cut any trees we wouldn't be able to keep warm or build anything out of wood. But if we cut down all the trees, there won't be any shade, or apples and other fruit, and many animals won't have homes or food, etc. So, we should cut trees that we need but plant more or allow other trees to grow in their place. Discuss other land uses. Show the children the four season posters and talk about the habitats in each and the different land uses portrayed.

SUPPLEMENTARY ACTIVITIES:

1. Match animal cards with their habitat cards.
2. Put out plants in the block area for children to build habitats for toy animals.
3. Visit a zoo and discuss whether or not zoo workers tried to make natural habitats for the animals.
4. Let the children pretend to be animals and encourage them to find their natural habitat on the play yard.
5. Display pictures of Missouri plants and animals in their natural habitats.
6. Explain that wild animals should not be kept as "pets." Wild animals should be left in the wild to grow up and have babies so there will be more wild animals. We help wild animals best by providing good habitat for them.
7. Read the book *Farewell to Shady Glade* by Bill Peet, Houghton Mifflin Company, Boston, MA, 1966, to the children. It is the story of animals who must find a new home after their's has been destroyed.

GET READY FOR WINTER

DID YOU KNOW? Different animals do different things to prepare for winter. Some store food so they will have something to eat, some eat lots more than they need and get really fat so they won't have to eat for a long time and others go south where it stays warm all the time. This activity will help children understand some of the things animals do to prepare for winter.

YOU'LL NEED: Pictures of various animals including a squirrel and enough peanuts in shells so that the children can have them for snacks. (The peanuts should be hidden around the classroom while the children are outside or washing their hands.)

WHAT TO DO: Ask the children what people are doing to get ready for winter. Some of the answers might include: cutting wood, harvesting and preserving food, insulating buildings, putting up storm windows, etc. Talk about things that might be going on at the school in preparation for winter. Ask the children if they know how animals prepare for winter. Discuss how each of the animals in the pictures prepare for winter.

Now tell the children to pretend to be squirrels. Ask them how squirrels prepare for winter. They look for nuts and store them. Tell the children that they are going to look for nuts to store in containers on the table for their snack. Let children scamper around the room like squirrels looking for nuts. When all the nuts are found, let them pretend to be squirrels while they eat their peanuts.

SUPPLEMENTARY ACTIVITIES:

1. Visit a farm and observe how the farmer is preparing for winter.
2. Point out flocks of birds that are flying south. Point out that some of the birds that live in the play yard have flown south for the winter.
3. Display pictures of people and animals preparing for winter.
4. Put play food in the block area for animals to eat or store.

I'M A LITTLE FOX SQUIRREL

DID YOU KNOW? Squirrels store most of the nuts they collect in holes in the ground. This not only gives the squirrels something to eat in the winter, but also aids in seed dispersal. This song will help the children become aware that squirrels eat nuts and store them in the ground.

YOU'LL NEED: The fox squirrel animal card.

WHAT TO DO: Show the children the picture of the fox squirrel and teach them the following song to the tune of *I'm a Little Teapot*:

I'm a little fox squirrel, red and brown.	(Put hands behind back like a squirrel tail)
I eat nuts that I have found.	(Pretend to eat nut)
I pick them up and bury them deep.	(Pretend to pick up nuts and bury them)
When winter time comes I'll have nuts to eat.	(Rub tummy)

Talk about a squirrel forgetting where he buried a nut. What happens to the nut? The squirrel has planted a tree (e.g., hickory nuts, acorns).

SUPPLEMENTARY ACTIVITIES:

1. When winter snows come, go to a wooded area or park and look for signs of where a squirrel dug up some nuts that he buried in the fall.
2. Discuss where other animals store their food.

SEE HOW THE TURKEY GROWS

DID YOU KNOW? The wild turkey has many enemies. It must escape predators while growing up and throughout adult life. This activity will help children understand the life cycle of the wild turkey.

YOU'LL NEED: The turkey animal card, felt flannel board characters and a flannel board.

WHAT TO DO: Read the children the following poem.

Momma turkey made her nest
in some low brush and some grass.
She had to lay some eggs soon,
so she had to work real fast.

She clicked and kelped. She laid six eggs.
She sat on them for weeks.
Until one day Momma turkey heard
five little "peeps."

One egg didn't hatch.
It got wet from the rain.
But five turkeys made it
and one was named Jane.

Jane and the others
followed Momma through the weeds.
They were very watchful
as they chomped bugs and seeds.

"Sssss" went a snake,
who was laying in the grass.
He chomped one of Jane's brothers,
he chomped him down real fast.

Four little turkeys left.
More watchful than before.
Along came a Red Fox
and chomped up one more.

Jane and the other two,
they would scratch and dig,
uncovering bugs and acorns.
They began to grow real big.

Soon it was fall,
and the leaves turned brown.
Along came a hunter,
walking all around.

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He waited for the turkeys.
BOOM, went his gun.
He saw all the turkeys,
but he only shot one.

Then the winter snow came.
It covered up the ground.
It covered up the turkey's food,
so it could not be found.

The winter got Jane's mother.
It got her brother, too.
But Jane scratched up some acorns
so she made it through.

Now only Jane was left.
She was all alone.
But soon the warmth of spring came
and she was nearly grown.

One day she heard a gobble.
She gave a kelping sound.
Here came a turkey,
strutting all around.

He was a handsome turkey!
And he had a fine song!
So Jane thought she would stay with him.
All day long.

Jane went and made a nest.
And late in the spring
she laid six eggs and settled down
to see what time would bring.

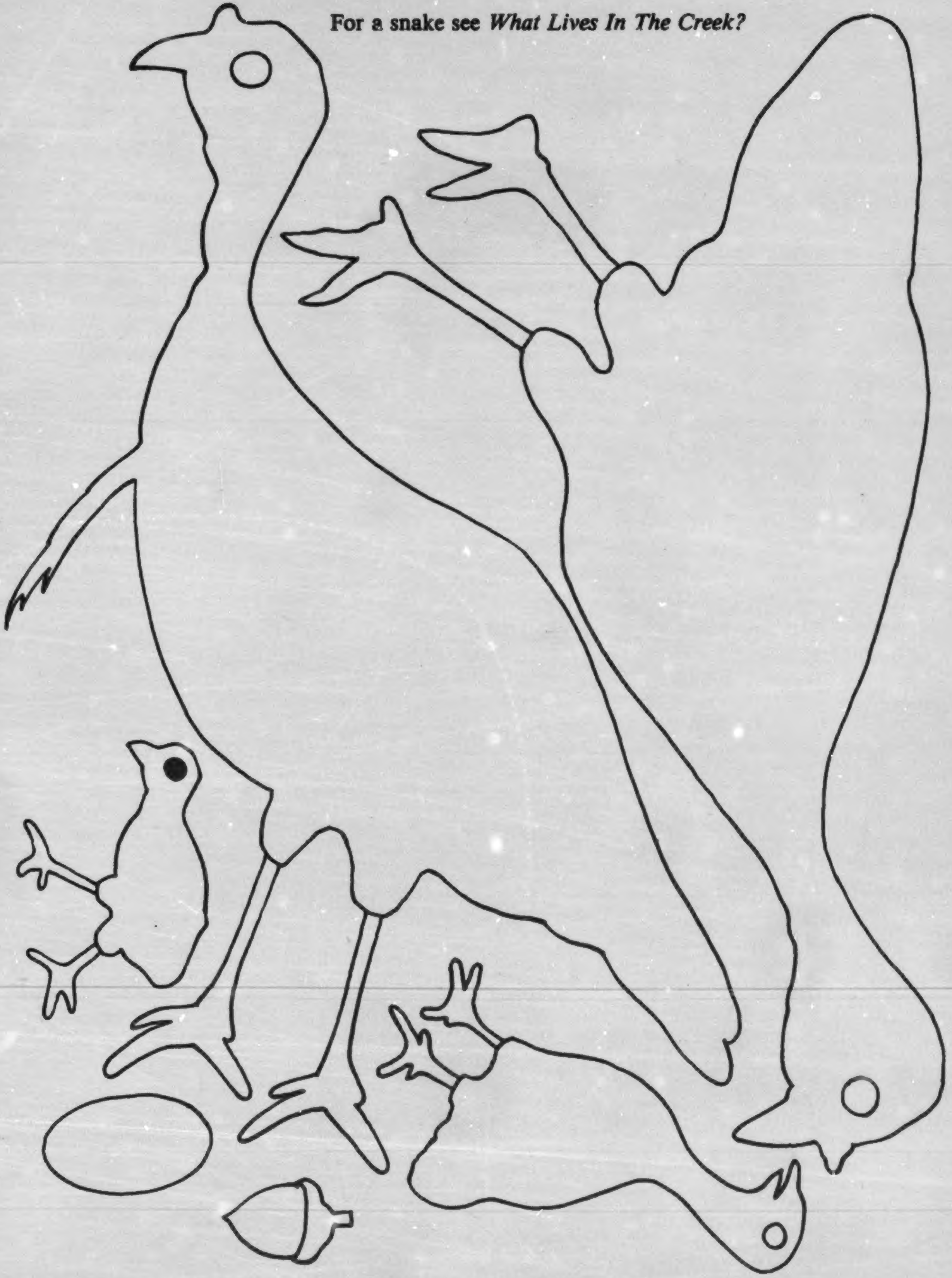
She clicked and kelped, she sat and sat.
She sat on them for weeks.
Until one day Jane heard
six little "peeps."

by John Griffin

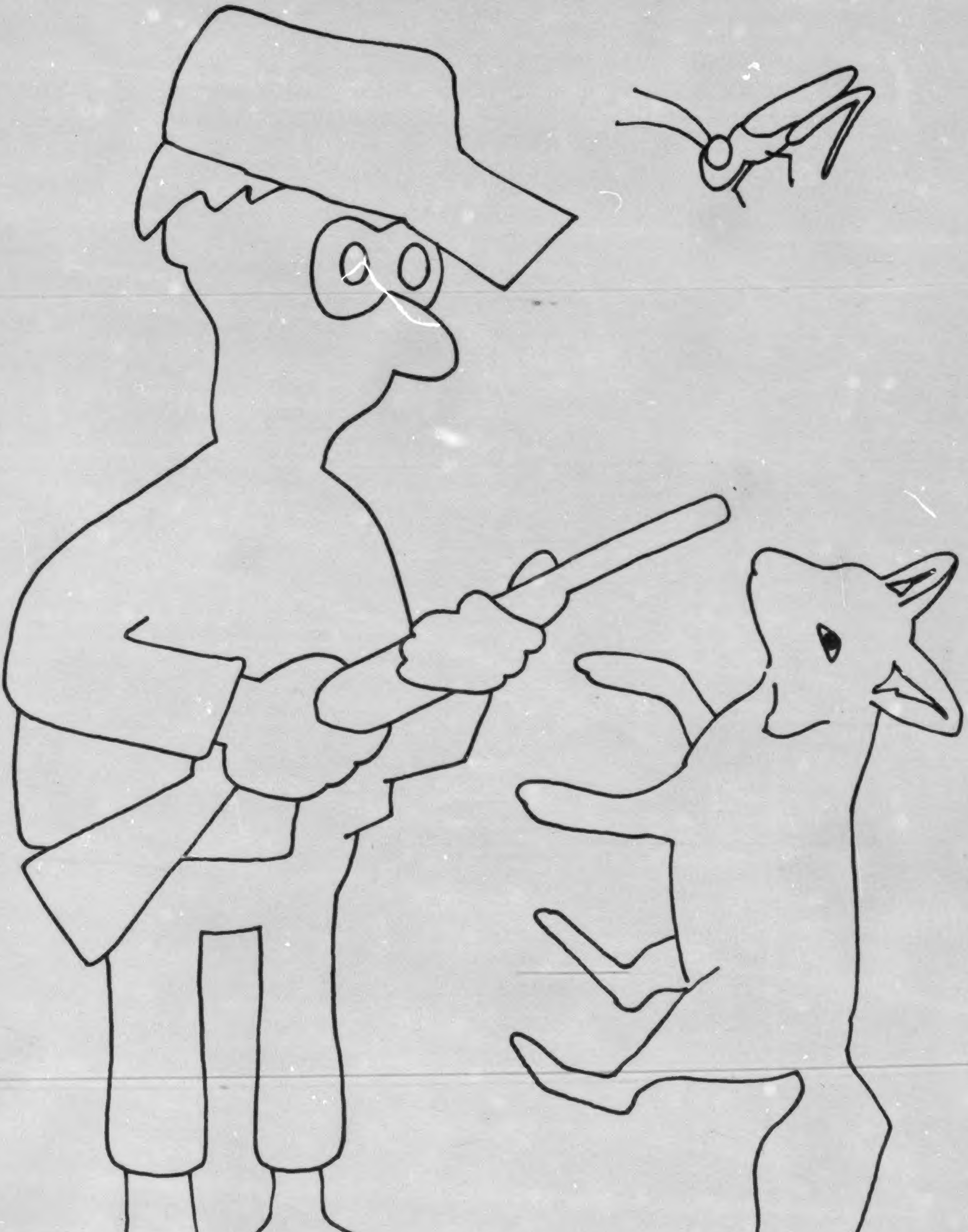
SUPPLEMENTARY ACTIVITIES: Discuss what happened to Jane and her little turkeys.

SEE HOW THE TURKEY GROWS

For a snake see *What Lives In The Creek?*



SEE HOW THE TURKEY GROWS



For additional bugs see *Willie The Woodchuck*

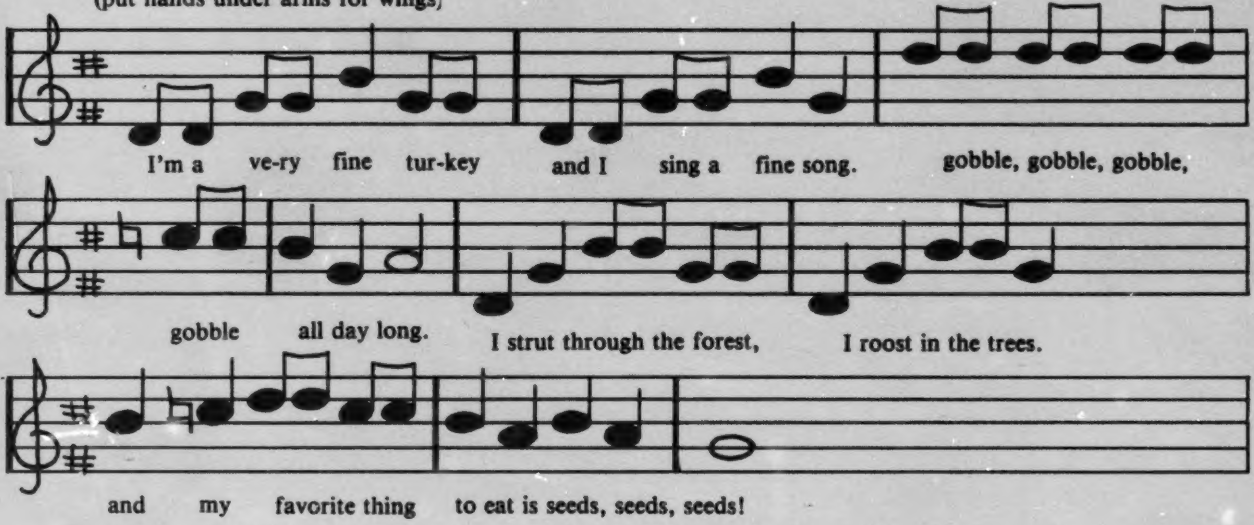
I'M A VERY FINE TURKEY

DID YOU KNOW? The wild turkeys was even hunted by pioneers and Indians. Wild turkeys live in Missouri forests and roost in trees at night. They eat insects and seeds. This activity will help make children aware that there are turkeys that are wild as well as those that live on farms. It will also introduce the concept of "roost."

Y[illegible]LL NEED: The wild turkey animal card.

WHAT TO DO: Talk to the children about the wild turkey and how it is different from the domestic turkey that farmers raise. Discuss what "roost" means. Teach the children the following song.

(put hands under arms for wings)


I'm a ve-ry fine tur-key and I sing a fine song. gobble, gobble, gobble,
gobble all day long. I strut through the forest, I roost in the trees.
and my favorite thing to eat is seeds, seeds, seeds!

SUPPLEMENTARY ACTIVITIES:

1. Bring in turkey feathers and eggs—not from wild turkeys—from domestic turkeys and chickens. Bring in some wild turkey feathers. Compare them all and match them with pictures of the animals.
2. Teach the children to play "catch a turkey." One child is the pioneer, the rest are wild turkeys. The pioneer is sleepy so he takes a nap (hides his eyes while the turkeys hide). When he wakes up he's hungry and wants some wild turkey for his supper. He has to go hunting. As he tags the turkeys, they go and sit where he was sleeping. To help the pioneer find the turkeys, they can gobble softly.
3. Discuss turkey season and how turkeys are still hunted in Missouri. Ask the children if any of them have ever visited a wildlife check station.

4. Visit a turkey farm to view domestic turkeys. Discuss differences between wild and domestic turkeys. Discuss how turkeys in the grocery store look as compared to live ones.
5. Help the children make pictures of turkeys by tracing around their hands and using the fingers for the tail and the thumb for the head.
6. Make turkeys out of pine cones by gluing on construction paper for features and tail feathers.

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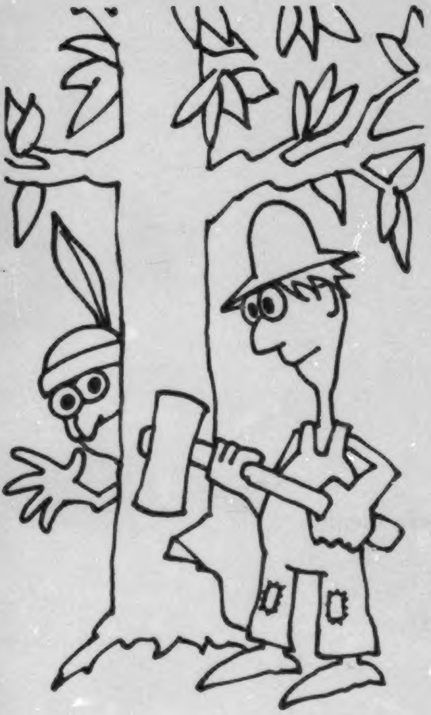
WALKS SLOW AND SAM

DID YOU KNOW? The pioneers and Indians who lived in Missouri did many things much differently than we do today. This story will help children to identify those differences.

YOU'LL NEED: Felt flannel board characters and a flannel board.

WHAT TO DO: Read the children the following poem.

Down beside the river,
underneath a tree,
lived a young Indian boy
in a big tepee.



His name was Walks Slow.
And his skin was red.
He wore pants of deerskin
with a feather on his head.

One day Walks Slow
heard a chopping sound.
He crawled through the bushes
to have a look around.

There was a white boy
chopping down a tree.
He wore a pair of overalls,
a patch was on each knee.

The boy's name was Sammy,
He was a pioneer.
The tree would make a log house
to keep him warm all year.

Sam worked real hard,
while Walks Slow watched,
Sam trimmed the trees to logs.
He chopped and stacked and notched.

Sam built his log house.
He invited Walks Slow in.
Walks Slow ate bread Sam had made.
He chewed it with a grin.

Sam showed Walks Slow
how he grew the wheat
and ground it into flour
to make the bread to eat.

Sam gave Walks Slow
some milk from his cow.
Walks Slow tried to get some more
and Sam showed him how.

Walks Slow asked Sam,
"What do you do for light?"
Sam gave him a candle,
so he could see at night.

Sam went to see the tepee
that belonged to Walks Slow.
It's sides were made completely
from the skin of buffalo.

Walks Slow cooked Sam
some meat from buffalo.
He showed Sam how he hunted
with an arrow and a bow.

It had been a long hard day.
Sam said with a laugh,
"I am tired and dirty.
Let's go and take a bath."

They both jumped in the river.
Sam with soap in hand
but Walks Slow scrubbed his red skin clean
with a handful of sand.

The air and sun soon dried them off.
They sat there on the ground.
They listened to a whippoorwill
and watched the sun go down.

High on a hill they sat.
The sun was setting fast.
No roads or towns for them to see,
just hills of golden grass.

by John Griffin

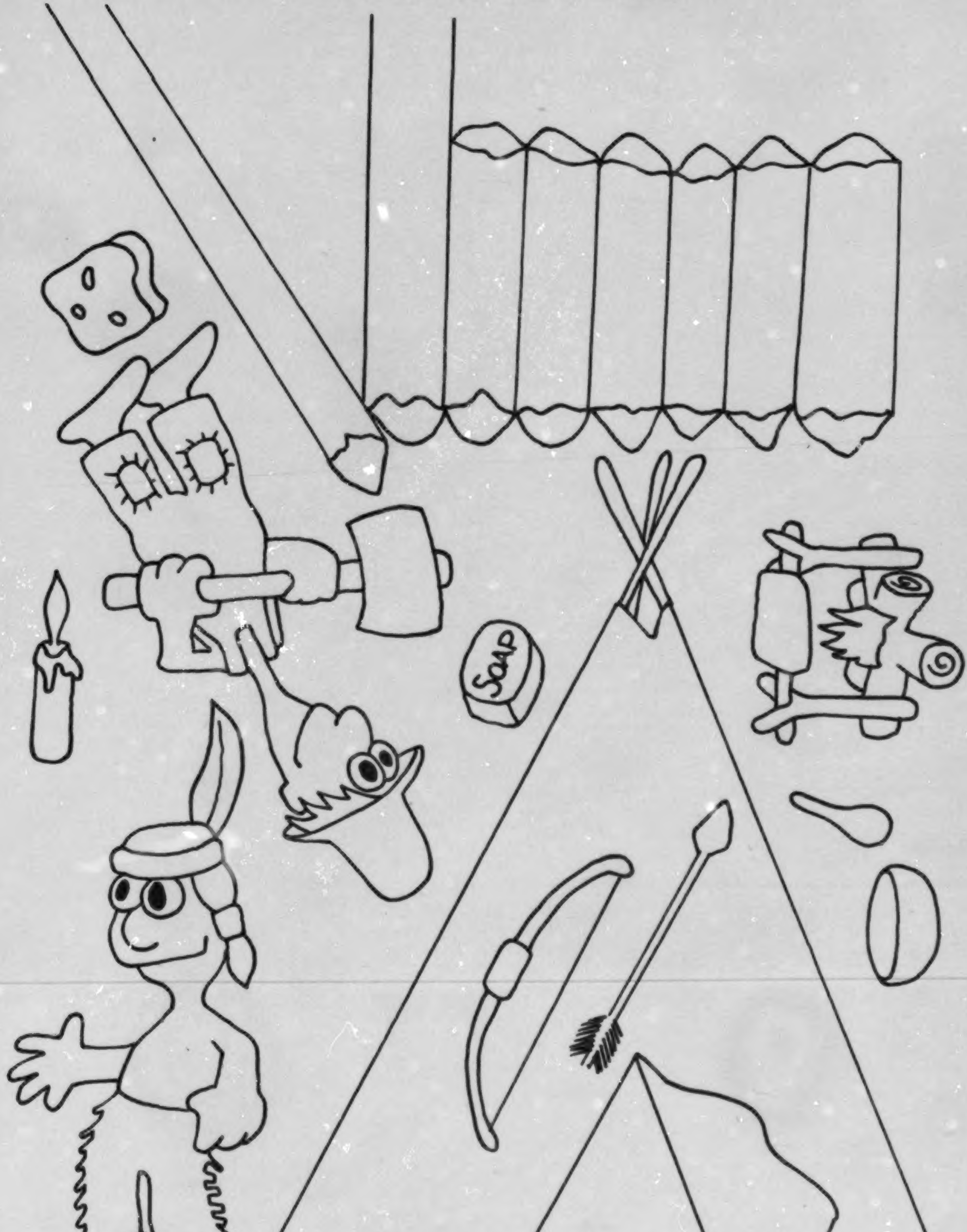
SUPPLEMENTARY ACTIVITIES:

1. Put out dress-up clothes of early settlers in the housekeeping area. Dark, ankle-length dresses, plain white aprons, long-sleeved shirts. Make an Indian cradle board cutting a 14" x 18" oval from heavy cardboard. Bind a doll to the board with ribbon and use narrow ribbon for the straps. (Avoid use of words like papoose, squaw and chief. These were not used by the Indians.)
2. Add logs or twigs to the block area for the children to build log cabins and tepees.
3. Have a grandparent, great-grandparent or another elderly person visit and talk about when he or she was a child.
4. Discuss toys played with by pioneer children. Make a bow and arrow and a fishing pole with sticks and string.
5. Visit a historical museum.
6. Have a pioneer day at school when everyone comes dressed as a pioneer.
7. Discuss how the Indians must have felt when the pioneers took away their land.
8. Display leather moccasins, jackets, leather scraps, fur, woven baskets, and basket weaving materials.
9. Make Indian beads:

   2 cups flour
   1 cup salt
   1 cup water
   1 teaspoon cooking oil
   food coloring

   Mix and form into balls. Push a toothpick through each ball to make a hole. These need several days to dry so if they're made on a Friday, they'll be ready to string on Monday.

WALKS SLOW AND SAM



A CARPET BUFFALO

DID YOU KNOW? Buffalo used to roam in herds all over Missouri. Indians and pioneers hunted them for food and clothing. Pioneers eventually killed nearly all the buffalo. Conversion of prairie habitat to farm land use prevented restoration of buffalo to their original numbers. This activity will help introduce the buffalo to the children as a major source of food and clothing for the Indians and pioneers.

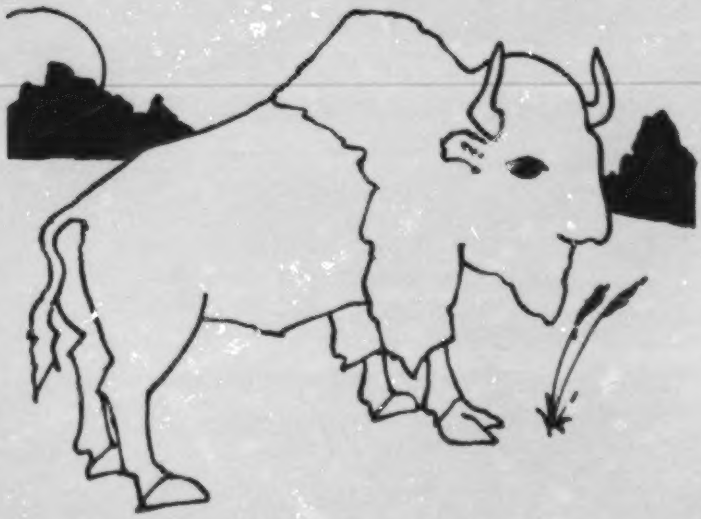
YOU'LL NEED: Scraps of brown or black carpet—at least two different textures, a large piece of cardboard, scissors, glue and a picture of a buffalo.

WHAT TO DO: Ask the children how many know what a buffalo is. Show them the picture of a buffalo. Discuss how the buffalo lived here a long time ago and the pioneers and Indians hunted them and used them for food and clothing, much the way we use cows today. Discuss the buffalo's coat and how it's different from that of a cow. Talk about what buffalo ate and how they lived. How was their habitat different from what Missouri is like today? Emphasize the fact that there were no fences so the buffalo could go wherever they wanted. Explain that today we grow corn, wheat, cattle and hogs on the land that was once "prairie."

Draw the outline of a buffalo on the cardboard. Have the children glue the carpet scraps (these should be cut into small pieces) onto the cardboard putting thicker carpet around the head and shoulders.

SUPPLEMENTARY ACTIVITIES:

1. Visit a farm or zoo that has buffalo.
2. Make buffalo for the block area from spools and material scraps.
3. Make felt buffalo steaks for the housekeeping area.



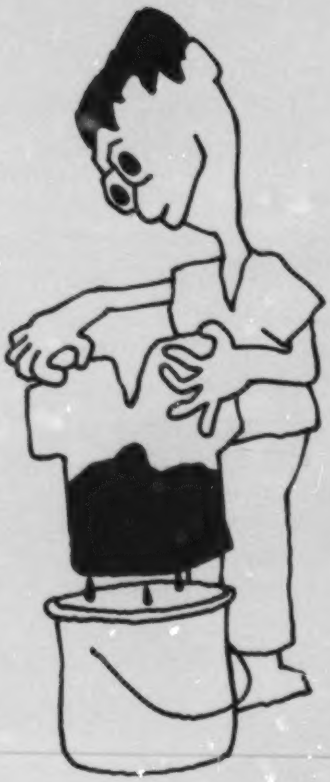
VEGETABLE DYEING

DID YOU KNOW? *Pioneers colored their fabrics with vegetable dyes.* Many different colors can be made from natural ingredients. This activity will help children become aware of how pioneers colored their clothing.

YOU'LL NEED: A white undershirt brought from home by each child, several different colors of vegetable dyes and the plants you used to make them.

WHAT TO DO: Crush any of the following plants or seeds, boil in water and cool.

goldenrod stalks and flowers—yellow
beets—red violet
dandelion roots—magenta
spinach leaves—green
blackberries—blue
sunflower seeds—blue
walnut hulls—brown
cranberries—red or pink



Explain to the children how pioneers had to weave their clothing from wool from their sheep or cotton they grew. These were always white or light brown. Ask the children if they would like wearing white all the time. Ask if they can think of any ways the pioneers could color their clothes.

Explain that dyeing something is like painting it with paint that soaks all the way through the fabric and will never come off. Talk about all the different colors in nature and how some of those colors can help people color fabrics. Show them the dyes you made and the plants you used to make them.

Let the children dye their undershirts in the vegetable dyes. These can be tie-dyed by gathering up spots and tying them with string or a rubber band. Hang the undershirts up to dry after the children are finished.

SUPPLEMENTARY ACTIVITIES:

1. Make ink by crushing ripe cherries, blueberries, blackberries or strawberries. Add a small amount of water and strain. Use a sharpened stick to dip into the ink and write. This was one way that pioneers used to write.
2. Bring in some broom corn and discuss what pioneers used for brooms with the children.

CANDLE MAKING

DID YOU KNOW? Pioneers didn't have electricity so they had to use other methods of lighting their homes at night. Candles were made by pioneer women from beeswax or tallow (animal fat). This activity will help children become aware of the candle-making process and another way that pioneers used animals.

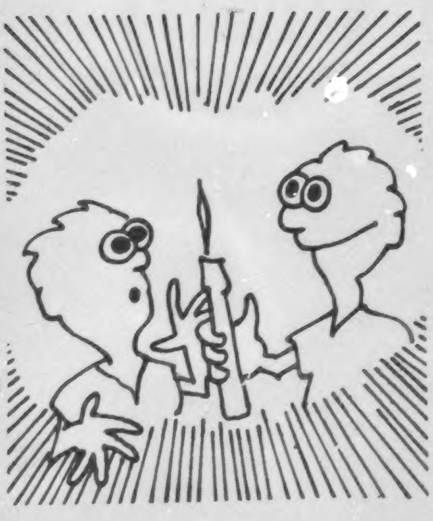
YOU'LL NEED: Wax or tallow—new store-bought wax can be used, the ends of old candles (your church or synagogue might save candles for you), or tallow (fat can be obtained from a local meat packing company, melted down and strained several times until it's nice and clear), cotton candle wicks, a crockpot, a stick for each child and a long extension cord.

WHAT TO DO: This project is best done outdoors because it tends to be messy. Melt your wax or tallow in the crockpot. The crockpot gets hot enough to melt the wax but is fairly safe to use around the children. Give each child a stick with a candlewick tied to it. Let the children dip their wick into the wax one at a time. While the children are waiting for their candle to harden and their turn to dip again, have them walk to a tree that is a short distance away, and return. Keep dipping until the candles are big enough or the children get tired.

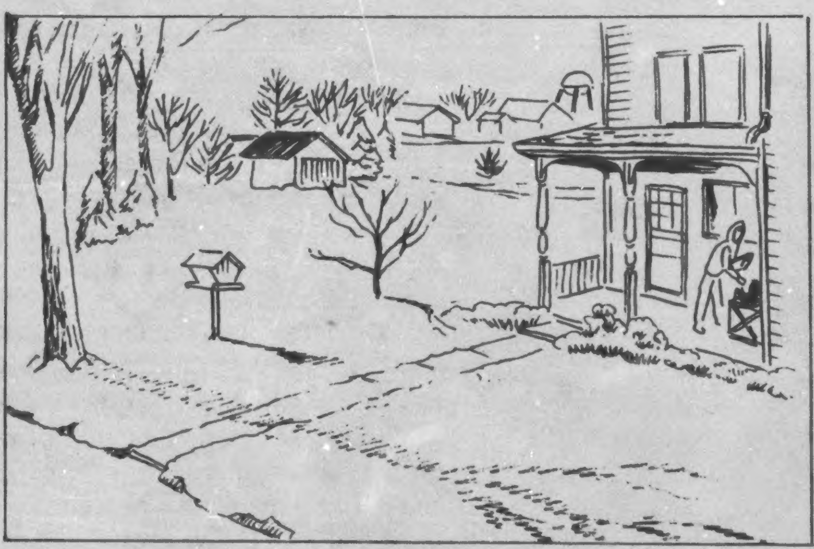
Be sure to discuss how pioneers made candles so they could see at night and what the pioneer women used to make candles.

SUPPLEMENTARY ACTIVITIES:

1. Discuss other things that pioneers had to make themselves because there were no stores nearby. Bring in samples of homemade lye soap, quilts, candles, home-canned foods, candy, homemade bread, etc.
2. Have dried fruit for snack so the children can experience what kinds of things pioneers ate.
3. If there is an Amish or Mennonite community nearby, take the children for a sightseeing tour.
4. Discuss the various forms of transportation the pioneers used.
5. Make taffy. Heat 2 cups of honey to boiling. Add a pinch of baking soda, 1 tablespoon butter, 1 tablespoon lemon juice and a few grains of salt. Boil to the hard ball stage and pour into a buttered pan. Let cool until it can be handled without burning. Have the children's hands washed and buttered. Pull the taffy by taking it from the outside of the pan first as it's the coolest there. Divide it into several gobs and pull it into a long strand and then fold it back into a single gob. It's done when it starts to break or won't stick together anymore. Tell the children that this was something that the pioneers did to have fun. Emphasize the fact that pioneers didn't have television or movies.



OUTDOORS IN MISSOURI—WINTER



Winter is a time of anxious anticipation. As "visions of sugar plums dance in their heads," youngsters dream of a white Christmas and testing new sleds. Adults openly wish for a mild winter.

At this time of year, many Missourians depend on forest resources. Deciduous forests are characteristic of much of our state, but Christmas trees are available from small plantations. People may use artificial trees, buy natural ones from stores or plantations or, perhaps, go afield to select growing cedars with landowners' permission.

Many Missourians have installed woodburning stoves and fireplaces to cut fuel costs. But this fuel supply is not unlimited because development, agriculture and a growing demand for wood as fuel constantly diminish our forests.

In December and January, snow blankets the outdoors. Some people prefer to sit near a crackling fireplace with a book while others enjoy outdoor winter sports—skiing, sledding, skating and birdwatching.

The insulating effect of snow protects some plants and animals. Certain insects remain active in plant litter on the forest floor. Mice scurry through under-snow tunnels.

But deep snow makes it difficult for other animals and birds to find food and cover. Rabbits, unable to reach dried grasses, nibble bark and twigs that protrude above the snow; quail rely on standing ragweed and milo for seeds. Ice storms are a particular hardship for wildlife since ice coats food supplies and damages cover.

Many Missourians feed birds in winter. Once begun, feeding must continue because these small creatures have high metabolisms and become dependent on the daily rations. Prolonged snow and ice cover may make it impossible for birds to get the grit they need for digestion. Making sand available at feeding stations is an added help.

Colder temperatures stimulate growth of dense underfur and long guard hairs on furbearing mammals. Trapping is a legitimate method of harvesting fur resources. It is also an effective way for conservationists to manage populations of certain species and, on occasion, to remove a problem animal from a specific area.

December and January are months that call attention to the winter needs of wildlife, a time to plan for future conservation practices for implementation next spring.

February is a time of stress for wildlife. Words like carrying capacity and winter carry-over become stark reality. Many birds and animals die from starvation, exposure and disease because snow and ice blanket dwindling food supplies and further reduce available cover. In areas of good food and cover, some of each species will survive and reproduce in the spring.

Many eagles winter in Missouri, and February is a good time for eagle watching. Look for eagles near lakes and rivers; they feed on fish and help keep waterfowl populations healthy by preying on diseased, injured or weakened individuals.

In February, most aquatic plants and animals are under the ice. Sunlight penetrates translucent ice to furnish energy for algae and other green plants to carry on photosynthesis. However, when heavy snow covers the ice for long periods of time and keeps all light from the water below, some plants die. Decomposers complete decay using precious oxygen. Pond fish kills are common this time of year because of reduced oxygen levels.

Sometimes, by spring, only the most hardy aerobic (oxygen-breathing) organisms remain alive. But there is no waste in nature. The decaying fish and plants provide nutrients for new plants. This is the beginning of food chains and food webs that may include microscopic animals, insects, fish, amphibians, reptiles, birds, larger animals and people.

Toward the end of February, sap begins its flow upward through the tree. The time is near to tap sugar maple and boil the sap to tasty maple syrup.

Already some mammals such as squirrels and opossums are bearing young. Woodchucks begin to emerge from hibernation... Outdoors in Missouri.

POSTER GUIDELINES

The winter poster emphasizes a residential land use pattern. This type of land use may be most familiar to the majority of Missourians. Residential areas provide habitat to many forms of wildlife as well as sheltering the people who live there. The presence of the bird feeder, trees and other vegetation indicate that song bird habitat needs are being met. The cardinal is a familiar year-round Missouri resident.

Several uses of forest resources are evident in the poster, including firewood, a Christmas tree, and lumber from which the houses were built. Other live but dormant trees are evident and are related to some of the winter activities.

Human activities include ice skating, bird watching, the harvest and enjoyment of the solar energy released in burning firewood.

This poster will be useful throughout the year to compare with the other season posters to show contrasts in land-use patterns, human activities and examples of wildlife habitat and needs...Outdoors in Missouri.

A TREE FOR ALL SEASONS

DID YOU KNOW? By observing the trees in Missouri it's easy to identify the seasons. This activity will help children observe the changes in the outdoor environment.

YOU'LL NEED: A large brown construction paper tree placed on the wall or bulletin board, cotton balls, construction paper, bird seed, glue, tape, scissors and pictures of winter activities.

WHAT TO DO: Put up the tree in the classroom. Discuss how the children think it should look in winter. Should it have leaves? Let the children tape cotton balls around the tree to represent snow. Help them make construction paper birdfeeders with some birdseed glued on to hang in the tree. Cut out pictures of winter activities such as ice skating, sledding, skiing, etc., to put around the tree. Discuss how the tree changes with each season.

SUPPLEMENTARY ACTIVITIES:

1. Change the tree decorations as each season changes. Let the children gather things they found outside to put on the picture.
2. Play appropriate music and let the children pretend to ice skate, sled, ski, etc.
3. Make a graph or chart of what your birds like to eat and which feeder they use most. Also note what they don't like to eat.
4. Put up pictures of birds that the children might recognize. Use the robin, bluebird and cardinal animal cards. Locate the birds on the four season posters.
5. Feed the birds all year round and discuss how the birds who feed in the winter are different from those who feed in the summer.
6. In the summer, put out a bird bath and watch the birds bathing.

BIRD FEEDERS

DID YOU KNOW? There are many different species of birds in Missouri. Some are insect eaters, some are seed eaters, some are birds of prey, and some are scavengers. An interesting and fun experience can be provided for young children by making birdfeeders and observing the birds that feed at them. If a program of winter bird feeding is initiated, it should be continued throughout the cold months. Bird feeding cannot and should not replace an emphasis on providing good habitat for birds, but if done properly it can help in bad times and is very enjoyable.

YOU'LL NEED: An empty toilet paper roll for each child, peanut butter, birdseed, a pie tin and plastic knives. A leaflet titled *Winter Birds*, available from the Department of Conservation, shows several winter species at feeding stations.

WHAT TO DO: Have the children use the plastic knives to spread the toilet paper rolls with peanut butter. Roll these in the birdseed. Hang these feeders outside a window of the classroom. Soon the birds will be visiting your school regularly. Hang the feeders high enough to discourage neighborhood cats. The empty toilet paper roll should be removed and thrown away when all the food is eaten. Be sure to point out the birdwatchers in the spring and winter posters.

SUPPLEMENTARY ACTIVITIES:

1. Put up several different kinds of feeders and see which the birds like the best.
    - a. Fill a half of grapefruit peel or a half a coconut with birdseed and peanut butter and hang outside.
    - b. Make a Christmas tree for the birds by stringing popcorn and cranberries and hanging different feeders on it.
    - c. Stuff a pine cone with peanut butter and birdseed.
    - d. Cut doors in a plastic milk jug, fill the bottom with birdseed and hang outdoors.
    - e. Hang mesh bags of suet or fat in the trees to attract woodpeckers.

BIRD PUZZLES

DID YOU KNOW? Bird's feet and beaks vary according to habitat and the kind of food they eat. This activity will help draw the children's attention to the color and size of birds and to differences in their feet and beaks.

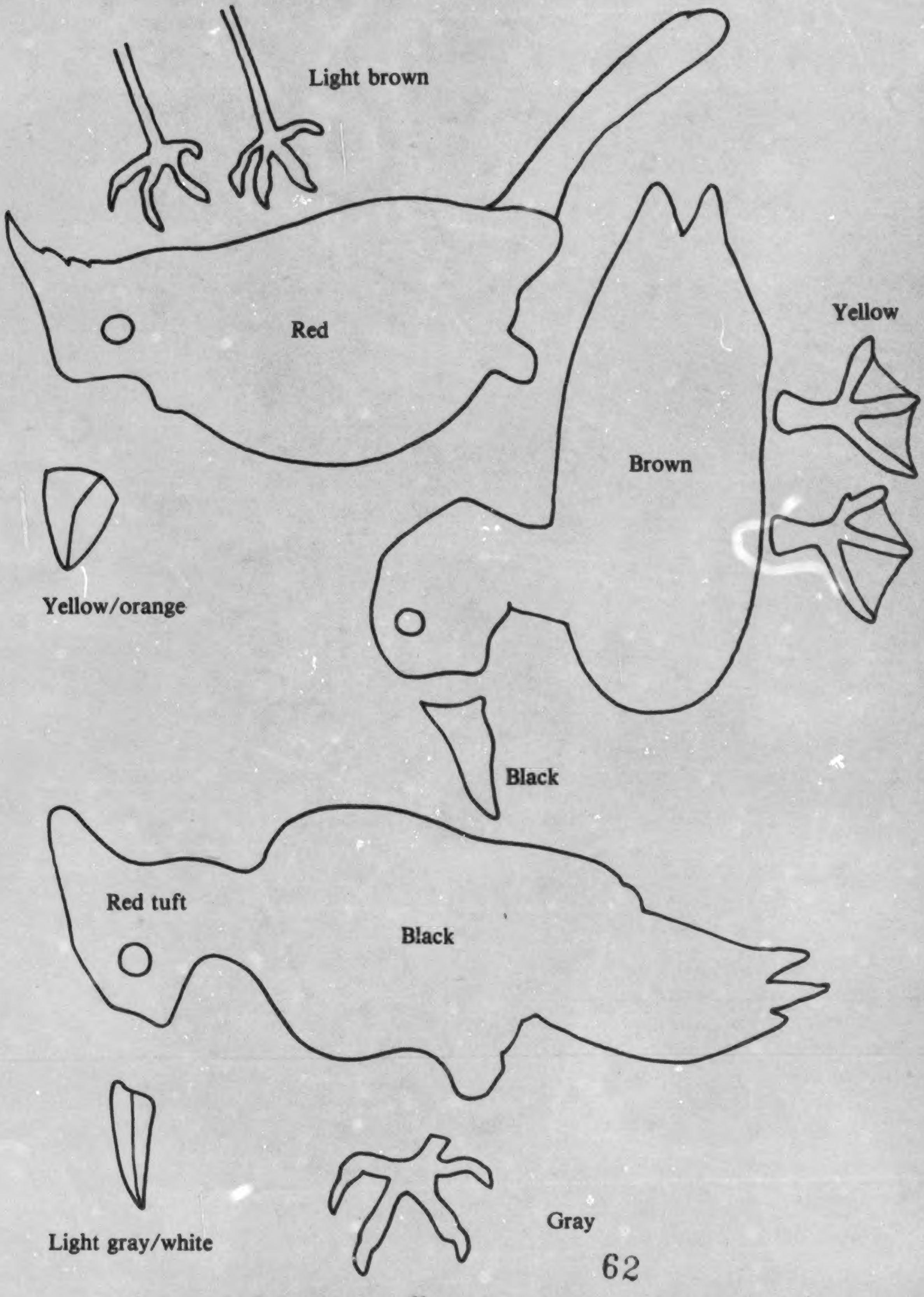
YOU'LL NEED: Felt bird parts and a flannel board.

WHAT TO DO: Let the children experiment with putting different feet and beaks on the birds. Discuss how some birds need webbed feet for swimming, others need claws for holding onto trees, etc. Discuss how some birds have long, skinny beaks to get insects out of trees, some have short, strong beaks for cracking seeds, etc. Discuss how certain types of legs go with certain types of beaks. The bird who eats insects in trees needs a long skinny beak and feet with claws to hang onto the tree.

SUPPLEMENTARY ACTIVITIES:

1. Observe the different ways birds perch and eat at the feeders on the play yard.
2. Let the children pretend to be birds. Have them stand and feed like different kinds of birds with different types of feet and beaks.

BIRD PUZZLES


Light brown
Red
Yellow
Brown
Yellow/orange
Black
Red tuft
Black
Light gray/white
Gray

STUFFED BIRDS

DID YOU KNOW? Although not all species of birds can fly, all have feathers and wings. A bird's feathers are tough, light-weight and very strong. The feathers are slightly oily so they will shed water. The bird also uses its feathers to keep warm. This activity will help children become more aware of the importance of feathers to birds.

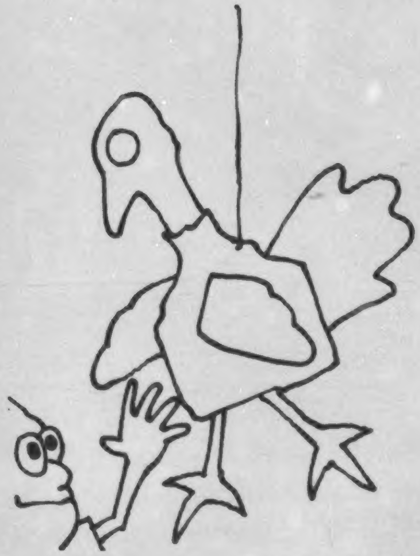
YOU'LL NEED: Some bird feathers (legally obtained), a pan of water, a magnifying glass, small brown paper or plastic bags, newspaper, construction paper, scissors and glue.

WHAT TO DO: Show the children the bird feathers. Discuss why a bird needs feathers. Examine the feathers under a magnifying glass. Demonstrate how the feathers are water-repellent by putting the feathers in water. Talk about where birds find shelter from the rain. Observe birds during the next rainy day.

Have the children stuff their bag with newspaper. Let the children glue eyes, wings, feathers, etc., cut from construction paper, on their bird bodies. Hang the birds from the ceiling so they look like they are flying.

SUPPLEMENTARY ACTIVITIES:

1. Make bird nests from twigs and dead grass and eggs from playdough.
2. Make a tree mural on the wall and hang from it the birds that the children have made.



I'M A CARDINAL

DID YOU KNOW? Birds can be identified by their color, profile and/or call. This activity will familiarize children with some of the unique characteristics of the cardinal.

YOU'LL NEED: The cardinal animal card.

WHAT TO DO: Show the children the animal card of the cardinal. Discuss some of the distinguishing characteristics. Teach the children the following song to the tune of "Frere Jacques:"

I'm a cardinal, I am red. (fold arms like wings and flat them)

I have a tuft, on my head. (make a point on head with hands)

I sing a pretty song. (flap arms)

My bill is small and strong. (make beak with fingers)

So I can crack seeds (pretend to peck at seeds)

when I feed.

Point out the cardinal in the winter and spring posters.

SUPPLEMENTARY ACTIVITIES:

1. Sit quietly outside and listen to bird songs. Songs will be more prevalent from March through June.
2. Watch for cardinals at the birdfeeder.
3. Serve rice krisps for snack and pretend that it's birdseed. Let the children try to eat like birds.

ANIMAL AUTOGRAPHS

DID YOU KNOW? Children can't always see animals in the wild but they may be able to find their tracks.

YOU'LL NEED: A fresh, undisturbed snow in a park, play yard or natural area.

WHAT TO DO: Explain to the children that you are going to look for animal tracks. Explain that they should be careful where they step so they don't disturb the tracks. Talk with the children about the kind of animal that made the tracks you find.

SUPPLEMENTARY ACTIVITIES:

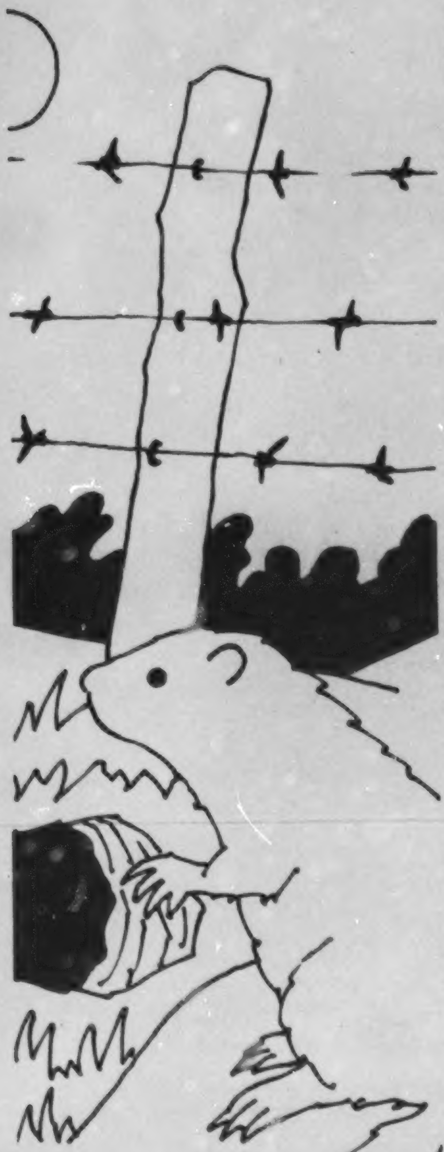
1. Make a matching game with pictures of animals and their tracks.
2. Have a few children and a teacher go out in the snow and make different types of tracks. Then the rest of the children can go out and try to determine what kind of tracks were made.
3. Discuss how the wind makes snowdrifts.
4. Let the children make different animal tracks by using their fingerprints on white paper.
5. Paint the bottom of each child's bare feet and let them step on a white sheet of paper.
6. A leaflet titled *Animal Autographs* is available from the Department of Conservation. This publication explains how to make plaster casts of animal tracks.
7. Read the book *Snow Tracks* by Jean George, E.P. Dutton and Company, Inc.; New York, NY, 1958, to the children. This is a story of animals who leave their tracks in the woods on a snowy day.

WILLIE THE WOODCHUCK

DID YOU KNOW? The woodchuck or groundhog goes into deep hibernation from November to February. They eat plants primarily and also bugs and snails. This activity will help children become aware of what hibernation is and how hibernating animals prepare for it.

YOU'LL NEED: Felt flannel board characters and a flannel board.

WHAT TO DO: Read the following poem to the children.



Willie was a woodchuck.
He had a bushy tail.
Every toe on each foot
had long sharp nails.

He used his feet to dig a hole.
He dug deep down.
He dug it in a fence row
where wheat grew all around.

Everyday at sun-up,
he'd search for seeds and bugs.
When he was full each night he'd sleep
in the hole that he had dug.

Willie soon got nice and fat
from the wheat that he chomped down.
He'd lay for hours in the sun
by his hole in the ground.

Soon the air was cooler
and the leaves turned brown.
Then the fall winds came
and the leaves fell down.

Winter was a-coming.
When Willie heard the news,
he crawled down in his woodchuck hole
to take a little snooze.

B-r-r-r came the winter cold.
Whoosh the wind would blow.
Willie kept on sleeping
and down came the snow.

Down came the winter snow.
Soon it was very deep.
Down inside his woodchuck hole
was Willie, fast asleep.

Down came ice and snow.
The sky was dark and gray.
Still Willie kept on sleeping
day after day.

The first spring warmth came.
The trees began to bud.
The ice and snow began to melt
and dirt turned into mud.

Down in Willie's woodchuck hole,
it was dark and deep.
Willie opened up his eyes
and woke up from his sleep.

He crawled out of his woodchuck hole.
He crawled outside to see.
Looking for those plants and bugs
as hungry as can be.

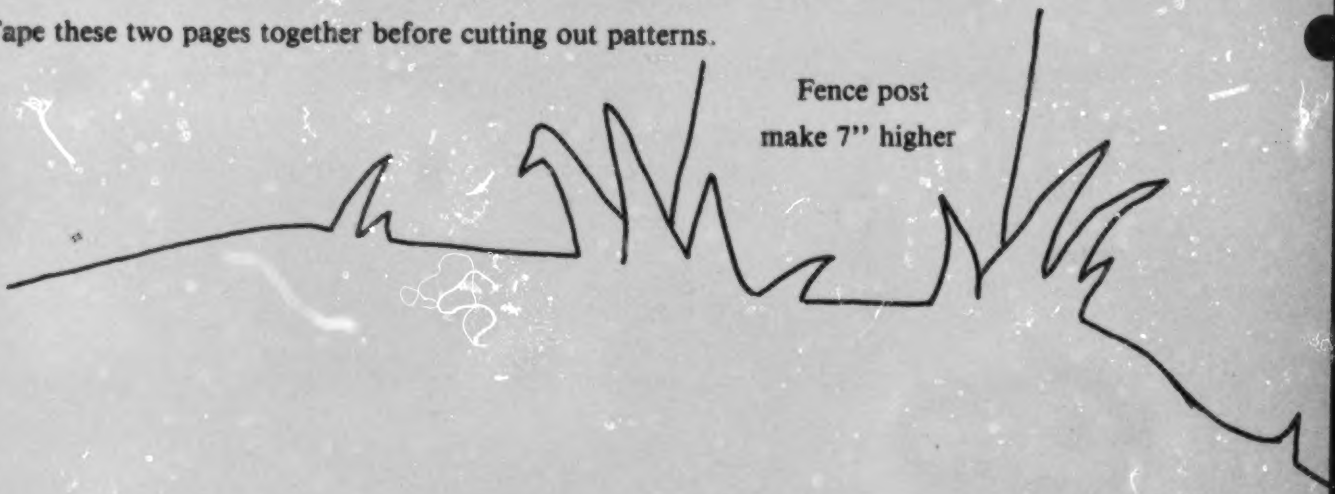
Soon he was back to searching
for seeds, plants or bugs
and snoozing in the sun next to
the hole that he had dug.

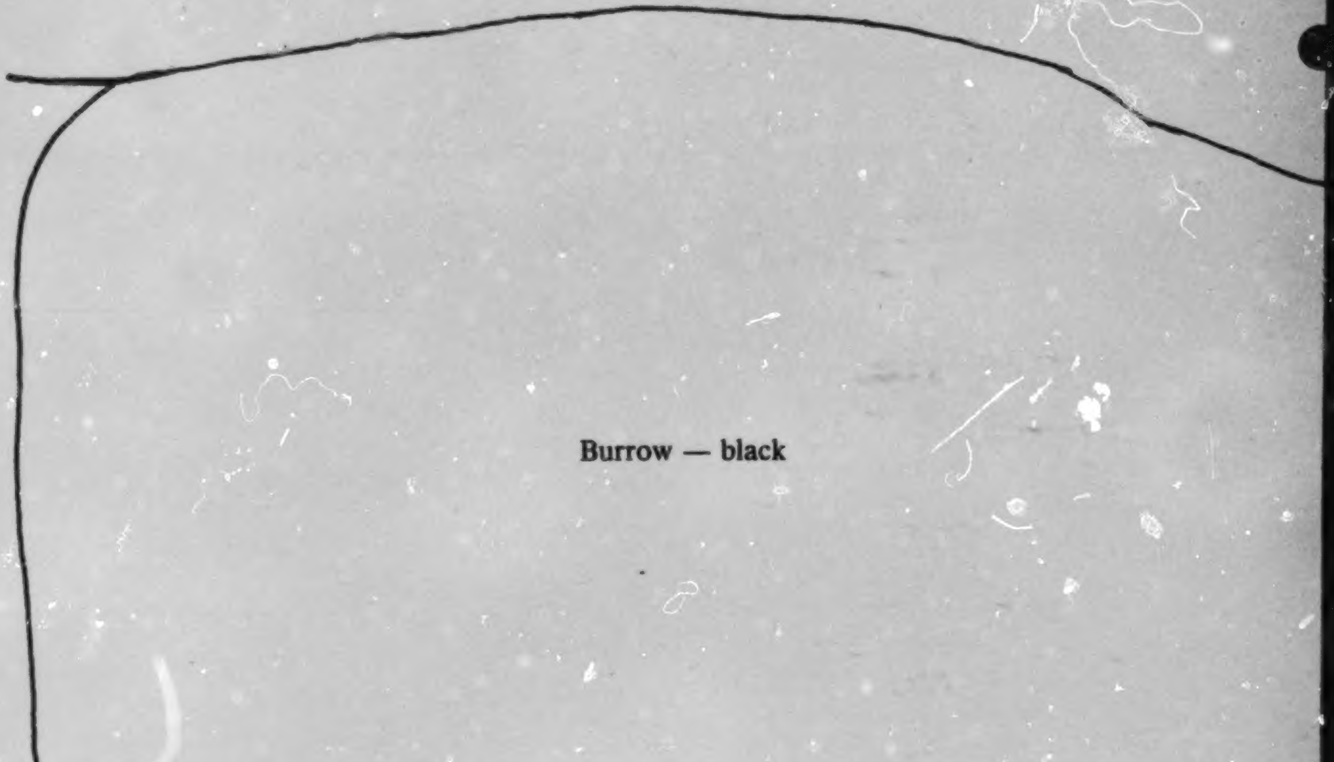
In the months before the winter
Willie eats all he can hold
and goes to sleep all winter
so he doesn't feel the cold.

by John Griffin

WILLIE THE WOODCHUCK

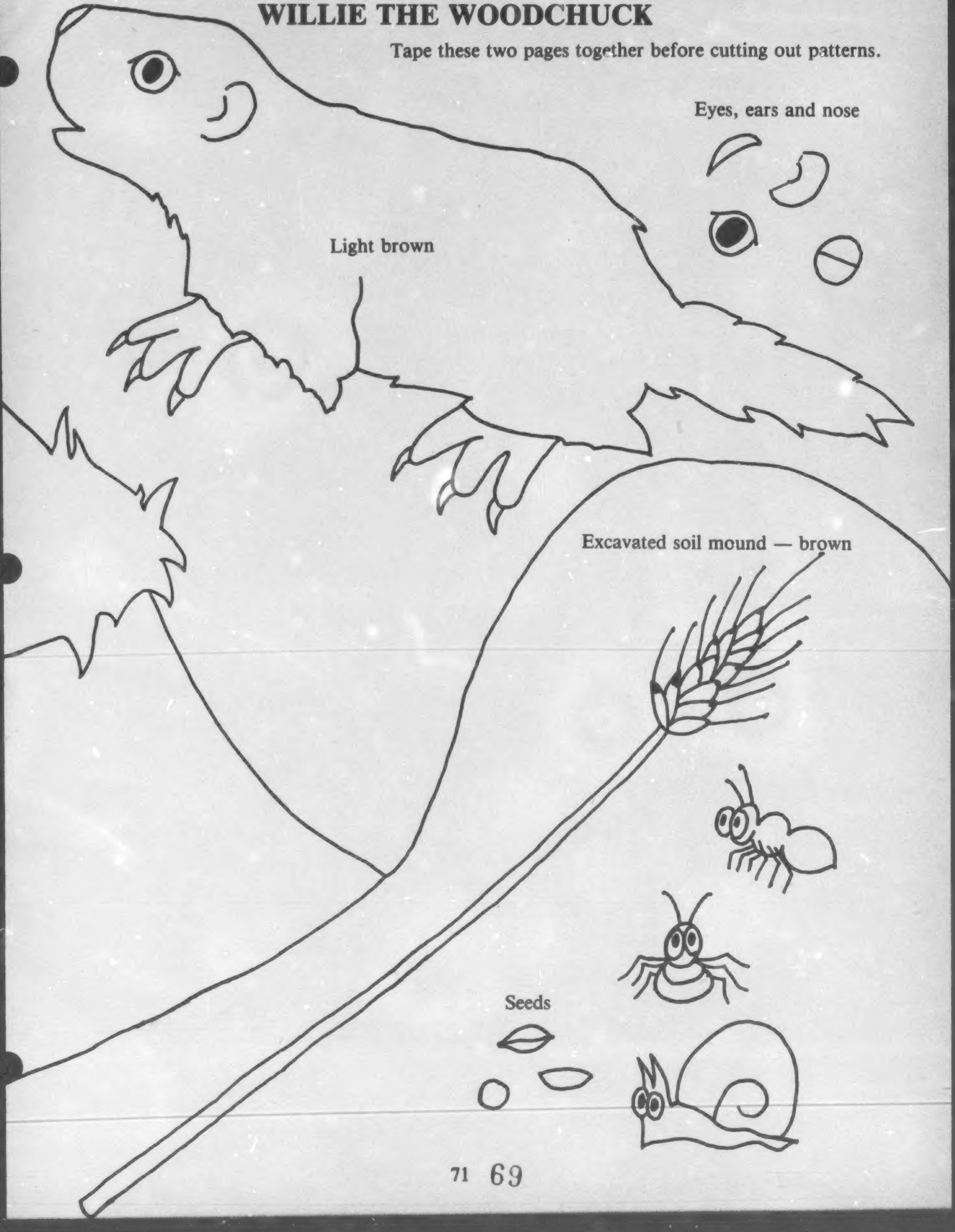
Tape these two pages together before cutting out patterns.


Fence post
make 7'' higher
Grass — green


Burrow — black

WILLIE THE WOODCHUCK

Tape these two pages together before cutting out patterns.


Eyes, ears and nose
Light brown
Excavated soil mound — brown
Seeds

WHERE DO ANIMALS HIBERNATE?

DID YOU KNOW? Animals hibernate in caves, hollow logs and trees, holes in the ground and any other warm place they can find.

YOU'LL NEED: A large cardboard box with one end open and the animal cards.

WHAT TO DO: Talk with the children about hibernation. Discuss how certain animals eat lots of food in the fall and grow thick fur, then, when it gets really cold, they find a warm place and sleep until spring. Discuss which of the animals on the animal cards hibernate. Talk about where they hibernate. Ask the children what they do for food and shelter if they don't hibernate. Discuss plants as well. Talk about how trees and other plants are dormant or resting until it gets warm again.

Let the children pretend that the large box is a cave and they are animals that hibernate. If they want, let the children paint the cave.

SUPPLEMENTARY ACTIVITIES:

1. During lunch or snack ask the children to pretend they are animals preparing to hibernate. They need to eat a lot to get fat and grow a thick coat. At nap time, ask them to curl up on their cots and pretend to sleep like animals in hibernation. When it's time to get up, tell them it's spring.
2. Encourage the children to look for dormant plants in the play yard.
3. In the block area build shelters for animals to hibernate in or find shelter from the cold.
4. Let the children find good places to hibernate in the four season posters.

FROST

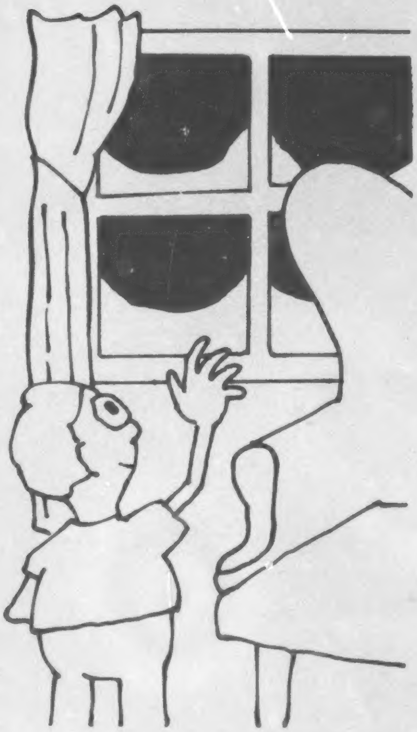
DID YOU KNOW? Frost is frozen dew or vapor. This experiment will help children understand how frost is formed.

YOU'LL NEED: A tin can (with the label removed), some crushed ice and some rock salt.

WHAT TO DO: Ask the children if they have ever seen frost outside. Discuss how it gets on car windows so they must be scraped on cold mornings. Let the children help fill the can alternately with layers of crushed ice and rock salt. Then let the can sit for a little while. Soon the water vapor in the air will change into ice crystals forming frost on the outside of the can.

SUPPLEMENTARY ACTIVITIES:

1. Point out to the children that their breath forms a cloud when it's cold outside. This is caused when their warm, moist breath is cooled by the cold air around it.
2. Ask the children to look for frost on the play yard.



THREE LITTLE SNOWFLAKES

DID YOU KNOW? Ice in your freezer is like frozen raindrops, sleet or hail. The frost around the edges of the ice cube tray is like snow, formed directly from water vapor in the air. This song will help children associate snow with cold and the fact that it falls from the sky.

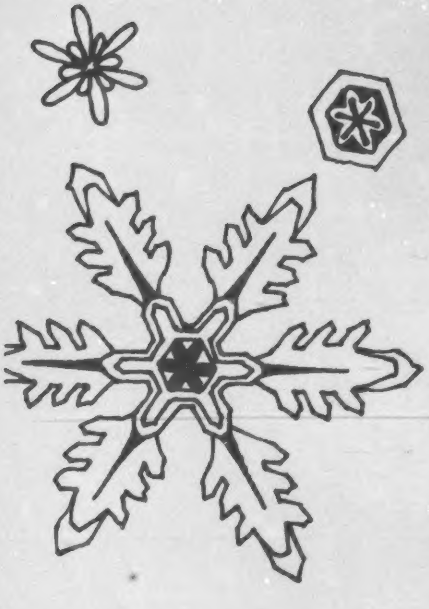
YOU'LL NEED: A snowy day.

WHAT TO DO: Teach the children the following song and motions to the tune of "10 Little Indians:"

1 little, 2 little, 3 little snowflakes (count on fingers)
Fall from the sky like little white snow cakes. (wiggle fingers)
They cover up your toes, (touch and wiggle toes)
and are cold on your nose, (touch nose)
and are prettier than anything man makes! (clap)

SUPPLEMENTARY ACTIVITIES:

1. Measure the snow depth with a yardstick. Discuss how it's deeper in some places than others.
2. Make snow pictures with white chalk on black or dark blue paper.
3. Discuss the importance of snow to the natural world. It provides moisture for the soil and plants and it serves as an insulator against the cold for soil organisms.
4. Let the children dance with white crepe paper streamers to simulate snow falling.
5. Put out large trucks, tractors and bulldozers in the block area for snow removal. Use styrofoam packing for artificial snow.
6. Make cotton ball snow pictures.
7. Make snow ice cream by combining 1 cup clean snow, 1 cup sugar and 1 teaspoon vanilla.



CATCH A SNOWFLAKE

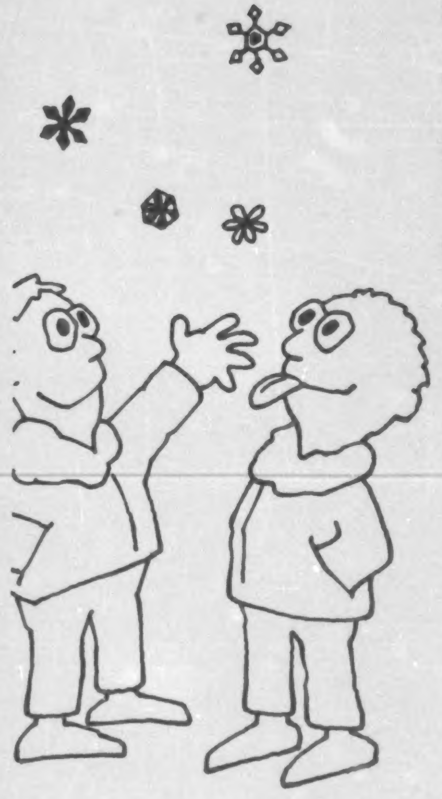
DID YOU KNOW? Snow is transparent ice but it looks white because of its many light-reflecting surfaces. Although each snowflake is different, all of them have six sides. This activity will help children realize what individual snowflakes look like and how each is different.

YOU'LL NEED: A snowy day, a dark piece of paper and a magnifying glass.

WHAT TO DO: Put the paper outside while it's snowing and catch a few snowflakes. Let the children study them with a magnifying glass. Ask the children if they think any of the snowflakes are alike. Ask if all snowflakes are different.

SUPPLEMENTARY ACTIVITIES:

1. Make paper snowflakes by helping the children fold white paper and drawing one or two straight lines at a time for them to cut.
2. Paint snowflakes by cutting green peppers in half horizontally and dipping them in white paint.
3. Serve large marshmallows and raisins for snack and let the children make snowmen.
4. Build snowmobiles with large blocks and make construction paper goggles.
5. Bring tubs of snow inside and let the children play with it. Be sure they wear mittens. Have them let snow melt in the palms of their hands and discuss what happened to it.
6. Make snowcones by filling cups with clean snow and pouring fruit juice over the top.
7. Mix food coloring with the snow.

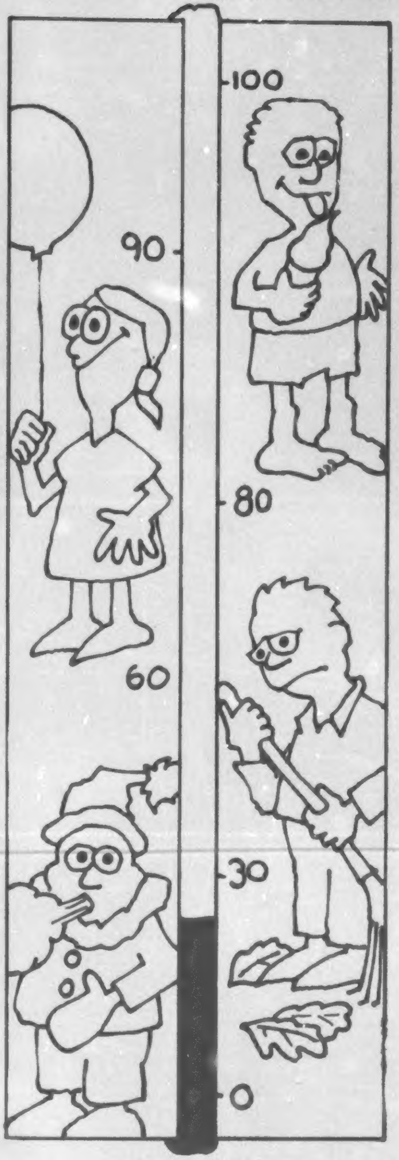


WHAT'S THE TEMPERATURE?

DID YOU KNOW? Outside temperature is a major weather indicator. This activity will help make children aware of the outside temperature and how that temperature affects them.

YOU'LL NEED: Two thermometers (one for outside and one for inside), a strip of ¼" to ½" elastic, a sturdy piece of cardboard, some old catalogs, scissors, glue and a red magic marker.

WHAT TO DO: Draw a large thermometer on the piece of cardboard. Color half of the strip of elastic red. The red will be the mercury in the thermometer. Put the elastic through holes in the top and the bottom of the thermometer. Sew or pin the ends together in the back. This will enable the "mercury" to be moved up and down the thermometer.



Ask the children how many have ever had their temperatures taken when they were sick. What did their parents use to take their temperatures? Show them the thermometers. Explain that one will be used to take the temperature of the air outside and the other to take the temperature of the inside air. Discuss when the air outside and inside might be at different temperatures and when they might be the same temperature. Hang the thermometers in places where the children can look at them.

Show the children the thermometer made from cardboard. Talk about where the mercury is when it's cold outside and where it is when it's hot. Have the children cut out several pictures of children in different types of clothing and glue the pictures on the thermometer in the appropriate places. Discuss how temperature helps people decide what types of clothing to wear. Discuss changes in animal behavior that are noticed with colder temperatures, e.g., some animals hibernate, some migrate and others stay in their "dens" on very cold days.

SUPPLEMENTARY ACTIVITIES:

1. Record temperature and daily weather on a calendar.
2. Put out seasonal clothing in the housekeeping area.
3. Display winter weather pictures.
4. Display pictures of animals in winter environments.

LET'S MAKE A BAROMETER

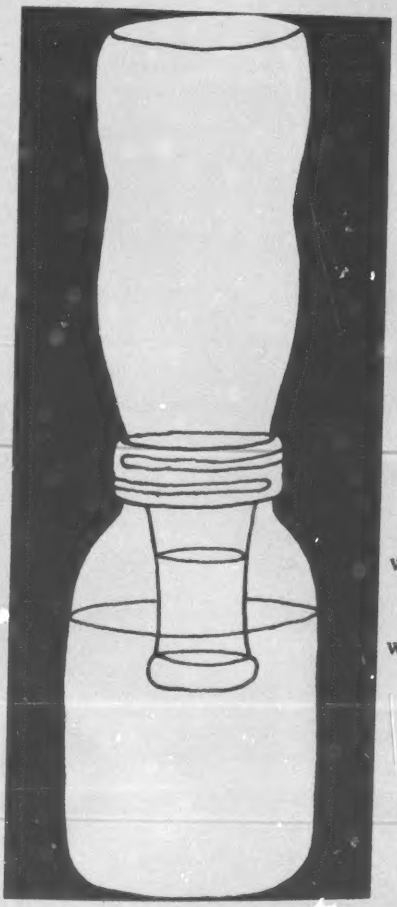
DID YOU KNOW? Measurement of air pressure is one way weathermen predict weather. Barometers are used to measure air pressure. When air pressure is high, the weather will be nice; when air pressure is low, some kind of precipitation is likely to occur. This activity will demonstrate how the barometer can help predict weather.

YOU'LL NEED: A soda bottle, a jar with an opening about the same size as the largest part of the soda bottle, nail polish and water.

WHAT TO DO: Talk with the children about how weathermen use barometers to help predict the weather. Fill the jar almost full of water and turn the soda bottle upside down in the jar. Make several marks on the outside of the jar to measure the water level in the soda bottle. When the air pressure is high, the air inside the soda bottle will equalize with the outside air and the water level inside the bottle will rise. When the air pressure is low, the water level in the soda bottle will lower. Observe the water several times throughout each day and watch the changes in weather.

SUPPLEMENTARY ACTIVITIES:

1. Record the water level on a calendar several times a day along with a record of the weather and temperature.
2. Notice animal activity patterns as you read the barometer and thermometer. Animal activities will usually be less noticeable with a falling barometer. The birdfeeder is a good place to notice animal activity levels.



ENERGY COLLAGES

DID YOU KNOW? There are many sources of energy: electricity, oil, gas, solar, coal, wind, etc. This activity will help children identify things that use energy.

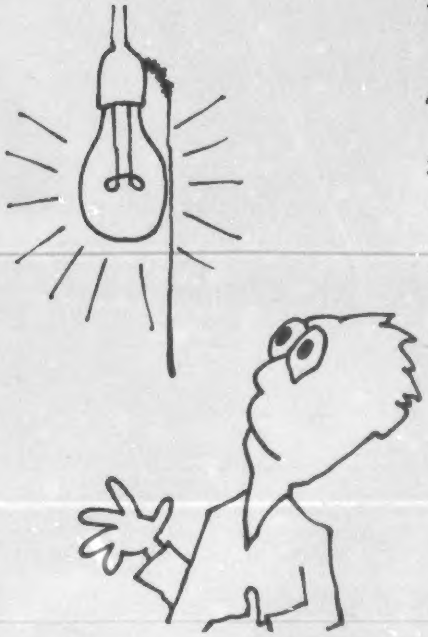
YOU'LL NEED: Old catalogs, scissors, glue, drawing paper and magic markers.

WHAT TO DO: Discuss what energy is with the children. Explain how energy is used to make things run. Ask the children if they can think of some kinds of energy. Identify things in the room that use energy and ask the children what kind of energy each item uses. Ask children what people do for energy.

Let the children cut pictures of items that use energy (furnaces, fans, toasters, etc.) out of the catalogs. Help them paste the pictures on a piece of drawing paper to make an energy collage. Discuss each item and the kind of energy it requires with the children.

SUPPLEMENTARY ACTIVITIES:

1. Make a matching game with pictures of different types of energy (gas can, the sun, electric poles, etc.) and the items that use that form of energy (car, greenhouse, television, etc.).
2. Display different types of equipment used for electricity such as a light switch, plug, cord, wire, etc.
3. Experiment with static electricity by rubbing a balloon on a child's hair and sticking the balloon to the wall. Rub some wool on a comb and it will pick up small pieces of paper.
4. Put out electrician clothing and a tool box in the housekeeping area.
5. Caution the children not to put fingers, tools, or toys in electrical outlets or electrical appliances.



DOES THE SUN GIVE US ENERGY?

DID YOU KNOW? The sun gives us free energy everyday. This activity will help make children more aware of the sun's energy.

YOU'LL NEED: Three pieces of dark construction paper, a book, a flower pot and a sunny day.

WHAT TO DO: Ask the children if they think the sun gives us energy. Discuss different things that need energy from the sun. Talk about what happens to a plant that doesn't get enough sunlight. Ask the children if they have ever gotten a sunburn. Why did they get the burn? Explain that the heat from the sun's rays causes sunburns. Let the children feel a sunny place in the room and one that isn't in the sun. Talk about the heat from the sun and how some people use it to help heat their houses.

Place the three pieces of construction paper in a sunny window. Leave the first piece blank. Place a book on the second piece so that only part of the construction paper is covered. The flower pot should be placed in the center of the third piece of construction paper. Ask the children if they think anything will happen to the papers. Discuss their answers. Remove the book and flower pot in a few days. Talk about the changes in the construction paper due to the sun.

SUPPLEMENTARY ACTIVITIES:

1. Display pictures of people using the heat from the sun (clothes hanging outside, crops growing, etc.).
2. Let the children make sunny pictures. Discuss what life would be like without the sun. Explain that the sun is the earth's only source of heat.
3. Place a plant in the sun and one in a dark room. Take note of the differences between the plants after a few days and after a week.
4. Read the book *Who Likes the Sun?* by Beatrice Schenk DeRegniers, Harcourt, Brace and World, Inc.; New York, NY, 1961, to the children. It is a story of a child enjoying the sun.

NO ELECTRICITY

DID YOU KNOW? Conservation means wise use of natural resources. People need to practice conservation so there will be natural resources left for the future. This activity will help children discover how life might be without some of our natural resources. Conservation attitudes formed now will carry over to other resources as the children mature.

YOU'LL NEED: A dark, cloudy day or you can close the blinds, some kerosene lamps and/or candles, a clean bucket of water, a dipper and some cups.

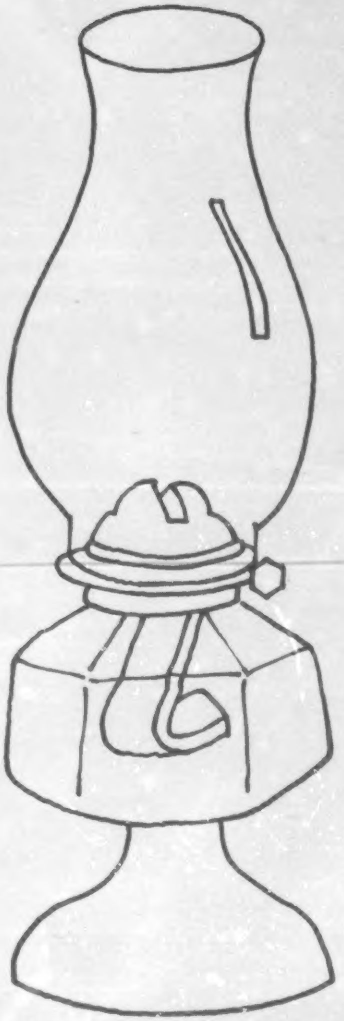
WHAT TO DO: Ask the children to pretend that there is no more electricity in the world. Turn off the lights in the classroom. Ask the children what you can do for light. Light the candles and/or lamps. Talk with the children about being careful around the open flame.

Discuss other ways that the children might be affected without electricity. Talk about water and how it would have to be pumped out of the ground by hand. Show them the water bucket and how to get a drink. Discuss whether or not toilets and bathtubs would work without electricity. What could be used instead of the toilet and bathtub?

Discuss heat. How could the children keep warm? Talk about the refrigerator and stove. Where would food be kept cold and how could it be cooked?

Discuss the fact that televisions, record players and radios wouldn't work. What could the children do for fun and for music?

Spend at least half the day at school without using electricity. Talk with the children about whether or not it would be fun to live without electricity all the time. Explain to the children that they must practice conservation or wise use of electricity so there will always be resources that produce electricity. Ask the children some ways that they might practice conservation. Answers might include only getting a drink when they are really thirsty, turning off lights and the television when they aren't using them, closing windows and doors when the heat or air conditioning is on, etc.



SUPPLEMENTARY ACTIVITIES:

1. Discuss other natural resources and how the children can conserve them.
2. Talk with the children about how the pioneers lived. They had all of the natural resources we have today but they didn't know how to use many of them. They also had to be more self-sufficient.
3. Visit a wood stove store and talk about whether or not wood stoves are a wise use of our natural resources. Renewable and nonrenewable resources could be discussed at this point. Oil and coal are nonrenewable while wood is a renewable resource, i.e., trees can be replanted.
4. Read the book *The Night the Lights Went Out* by Don Freeman, The Viking Press; New York, NY, 1958, to the children. This is a story of how a family gets by when the electricity goes out one cold winter night.

SAVING ENERGY

DID YOU KNOW? *People should practice conservation of resources so that natural* resources can be used for more people for a longer period of time. This activity will help demonstrate some conservation practices.

YOU'LL NEED: A group of children ready to listen.

WHAT TO DO: Talk with the children about the meaning of conservation. Discuss what wise use of natural resources means. Talk about the meaning of "natural resource" and list some natural resources—trees, water, coal, electricity, wildlife, land, etc. Does conservation always mean to preserve the resource and not use it at all? If it did, trees would never be cut—no paper, furniture, heat; and coal would never be used to make electricity—no air conditioning, television, refrigerators. Does wise use mean to restore natural resources? Should we plant more trees and throw back some of the fish we catch? Or does wise use mean to manage our natural resources? This would allow people to cut trees, but only cut what they need and plant more to replace them. We could use paper but not waste it and recycle it whenever possible. Electricity could be used but only when it is really needed.

Tell the children that you are going to play an energy-saving game. You will describe a way that energy is being wasted and they will tell you the way to practice conservation. Describe the following situations to the children and help them figure out ways to save the energy being wasted.

a. Jeanie goes into the bathroom to wash her hands. Her mommy calls her to dinner and Jeanie leaves the faucet running.
b. Johnny goes into the living room to watch television. He soon loses interest and begins to play but forgets to turn off the television.
c. Timmy drinks a soda on his way home from school and throws the tin can on the ground.
d. Lucy likes to draw. Her mother bought her a new tablet. Lucy makes a few marks on each page and then throws the tablet away and asks her mother for a new one.
e. Bruce misses his school bus so he and his mom jump into the car and drive very fast to school.
f. Cory wants to put some birdseed on the ground outside his window so that he can watch the birds eat. It's winter and the birds need extra food because the snow on the ground is covering up all their food. Cory opens the window and puts the birdseed out but doesn't close the window.

Can the children think of some other examples of energy being wasted and how they can conserve it.

SUPPLEMENTARY ACTIVITIES:

1. Encourage the children to describe ways that they waste energy at home. Talk about how they might practice conservation.
2. Relate the term conservation to wildlife and plants. Talk about the hunters, fishermen, woodcutters and harvesters in the four season posters. How are they practicing conservation? Look for other practices of conservation in the posters. This is another time to identify wise use (not to be confused with over use) of renewable resources.

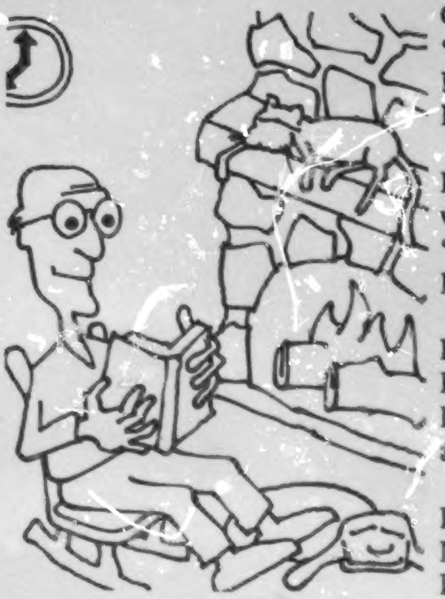
FRED'S FOREST

DID YOU KNOW? Conservation means the wise use of natural resources. There are several aspects of conservation: preservation, restoration and management. This story will demonstrate to children the three aspects of conservation. More information about levels or aspects of conservation can be found in a publication available from the Department of Conservation titled *An Ecological Approach to Conservation Education.*

YOU'LL NEED: Felt flannel board characters and a flannel board.

WHAT TO DO: Read the following poem to the children.

Fred had a forest,
a home for birds and bees.
Oftentimes, from his porch
he'd sit and watch the trees.



Cut a tree? "No!" said Fred,
"they're nice to have around.
I like to sit and watch them.
I'll never cut one down."

But winter cold soon changed his mind,
with it's snow and sleet.
"B-r-r-r!" said Fred, "I need a fire.
I must have some heat."

Fred got a chainsaw.
He sawed some trees for wood.
He burned them in his fireplace
and the heat felt good.

Fred said, "I like this heat.
No more cold for me."
Fred got his chainsaw
and cut down every tree.

He stacked up stacks of firewood
that were higher than his head.
"I may not have a forest
but I'll be warm," he said.

The years went by, Fred's firewood piles
got smaller every day.
The ground where once the forest stood
began to wash away.

The animals all moved away.
Their homes were all cut down.
Fred wished he had his forest back.
It was nice to have around.

Fred then bought some baby trees.
He planted carefully,
but Fred soon discovered
it takes years to grow a tree.

Fred grew old and years went by.
Winters, summers, fall.
Fred became an old man
before his trees grew tall.

Once again he had a forest.
The animals had a home.
And Fred was very, very proud
of the trees that he had grown.

When Fred needed firewood
for heat in wintertime
he'd cut only trees he needed
and the forest did just fine.

The ground no longer washed away.
Fred's forest grew and grew.
When the trees got crowded
Fred would cut down one or two.

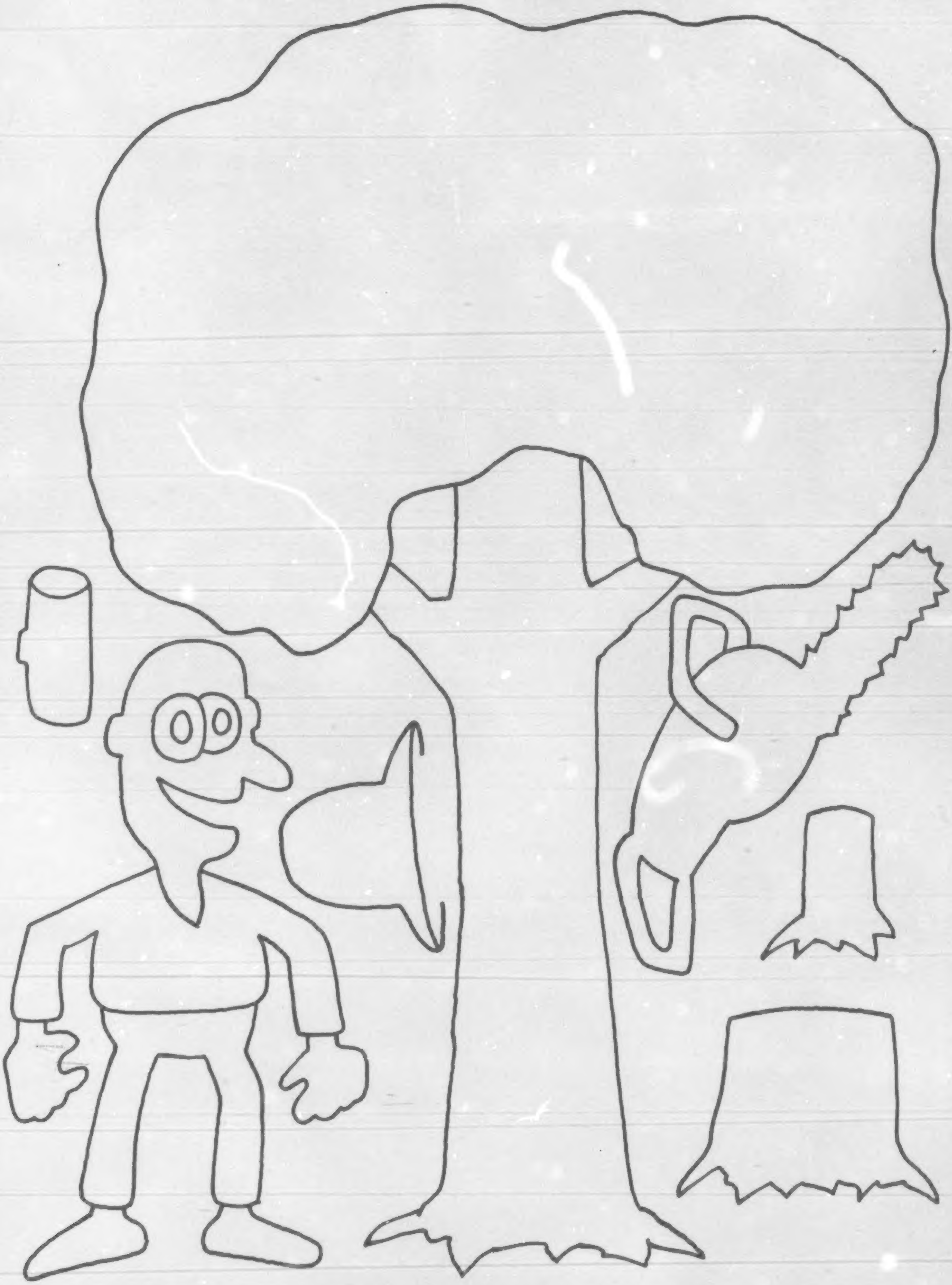
Fred's house was warm in wintertime
He was warm as he could be.
Fred had lots of firewood
and a forest full of trees.

by John Griffin

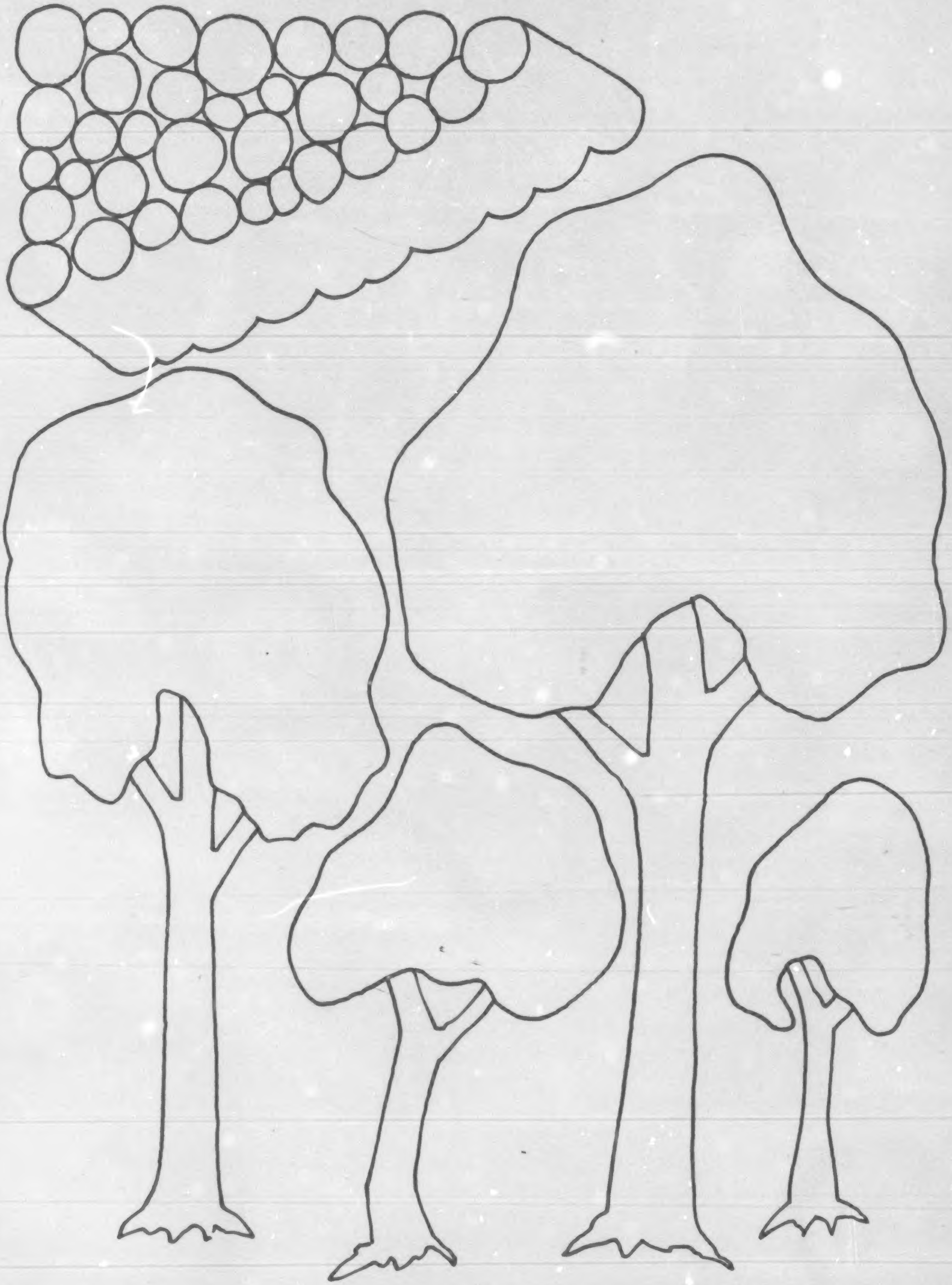
SUPPLEMENTARY ACTIVITIES:

1. Talk about the woodcutters in the fall poster.
2. Ask the children if any of them heat their homes with wood.
3. Visit a forest.
4. Make trees for the block area with twigs and clay.
5. Explain that forest is a renewable resource.

FRED'S FOREST



FRED'S FOREST



WINTER COLORS

DID YOU KNOW? In the winter we wear dark colors to absorb the heat of the sun and to insulate our bodies from the cold. This activity will help children become aware of why we wear dark colors in the winter.

YOU'LL NEED: A fresh, undisturbed snow on a sunny day, blue, red, black and yellow powdered tempera paint.

WHAT TO DO: Take the blue, red, black and yellow powdered tempera paint and sprinkle it onto the fresh snow on a sunny day. Look at it several times during the day and talk about what happens.

SUPPLEMENTARY ACTIVITIES:

1. Put out dark winter clothing in the housekeeping area.
2. Look through summer and winter catalogs and discuss the differences in clothing. Make a winter clothing collage.
3. Display samples of various types of winter materials: fur, wool, corduroy, etc.
4. Discuss the differences between animal coats in the summer and the winter.
5. Display pictures of people in winter clothing.
6. On a sunny winter day, feel the temperature difference of a white car and a black or red car.
7. Discuss how some animals' coats are darker in winter than in summer, e.g., deer, coyote, dogs.

INSULATION

DID YOU KNOW? Insulation helps keep heat in and cold out or cold in and heat out. This activity will help children become aware of insulation and its importance in conserving energy.

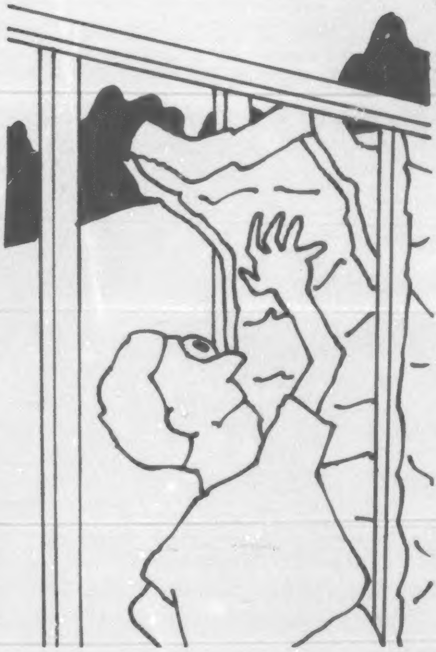
YOU'LL NEED: A thermos bottle, a cup, some ice cubes, and some building insulation.

WHAT TO DO: Put some ice cubes in a thermos and some in a cup. Ask the children which will melt first. Check the cup and the thermos several times during the day and talk about what happens.

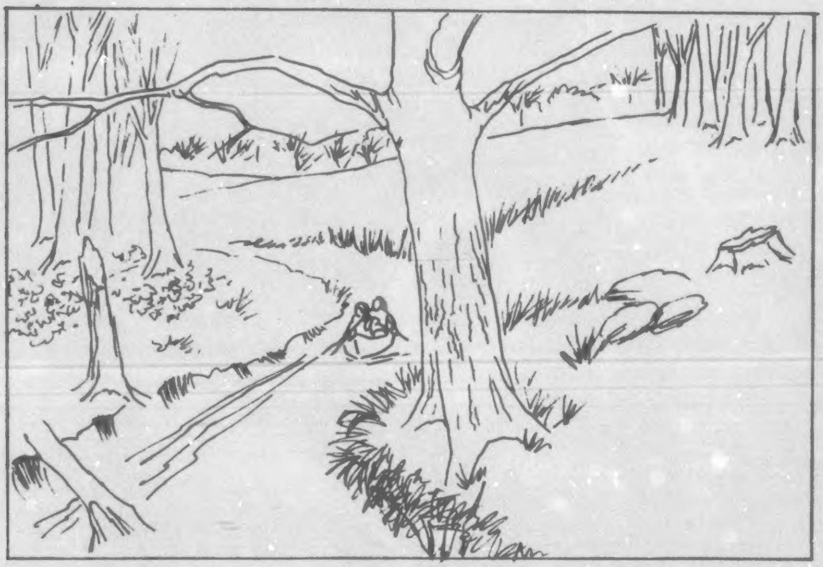
Show the children the building insulation. Tell them that this insulation keeps cold air out of buildings in the winter just like the thermos keeps warm air away from the ice. Discuss how keeping cold air out of buildings in the winter can help conserve energy. Discuss how insulation keeps warm air out of buildings in the summer.

SUPPLEMENTARY ACTIVITIES:

1. Discuss other ways people keep cold air out of their homes—storm windows, caulking, etc. Ask the children to think of some ways that they keep cold air out of their homes. Look for ways that cold air is kept out of the school.
2. Put out cotton in the block area with which the children can pretend to insulate their buildings.
3. Display insulation and caulking in the science area for the children to examine.



OUDOORS IN MISSOURI—SPRING



Spring is a time of increased activity for children and the Missouri outdoors. March blusters on the scene with its unpredictable weather. People cautiously plan outdoor activities, aware that tomorrow may bring a warm spring day or a late-season blizzard.

More direct radiation from the sun melts snow and ice. As the ice layer disappears from ponds and lakes, water temperatures become almost the same from top to bottom. With water temperatures just above freezing, most aquatic organisms and fish remain sluggish; little feeding or spawning occurs.

Increasing periods of sunshine create a general awakening. Some species of insects such as the mourning cloak butterfly which wintered as an adult, fly about on tattered wings. Others metamorphose from crysalis or egg to new life.

Now is a good time to prune many fruit and ornamental trees because sap will not bleed excessively through a cut, but will rise to heal the wound.

March is also forest fire season. Conservation Department forest fire fighting units are constantly on the alert during this season. Some people still burn forest plant materials when they are pruning or cleaning up last year's leaves and dead plants. But fickle March winds can quickly turn a well-intentioned fire into a blazing inferno that destroys property and wildlife habitat. Using discarded plant materials to make brush piles or compost heaps would help wildlife and improve the soil.

Waterfowl move northward through the state, stopping to rest and feed as they retrace ancestral migratory routes to their nesting grounds. By the end of March, some early migrant songbirds such as bluebirds and robins start courtship behavior and nest building.

On about March 21, spring (vernal) equinox occurs and equal periods of darkness and light are a sure sign of spring. National Wildlife Week coincides with the first day of spring. The Department of Conservation and the Conservation Federation of Missouri supply National Wildlife Week educational materials to Missouri educators, from early childhood teachers to college instructors.

In April, low-growing plants bloom on the forest floor. Plants such as Dutchman's breeches, Johnny-jump-up, and Jack-in-the-pulpit (Indian turnip) poke their heads above ground. They need sunlight to flower and produce seed, so they must bloom before tree leaves shade them.

In April we celebrate Arbor Day, a day dedicated to the appreciation and preservation of trees and forests. In the early 1800s, Missouri had 33 million acres of forests; today there are fewer than 11 million acres. The Conservation Department's George O. White Nursery grows millions of trees. The Department furnishes a free tree to every fourth grade student in Missouri. Most species of trees should be planted before light and warmth cause the seedlings to break dormancy and start new growth.

Certain trees and bushes such as redbud (Judas tree), flowering dogwood (the Missouri state tree), and wild plum blossom in April. Many early leafing trees such as hickory and oak take on a tint of red or green as their first leaf buds unfold. Squirrels rely heavily on new buds, tender twigs and flowers of elm, oak, maple and other trees for food. The nursing female squirrel needs a lot of nourishing food to produce milk for her young.

Larger animals such as red fox, coyote, raccoon and bobcat begin to have young.

The April sky comes alive as splendidly colored male songbirds compete for territory and a mate. Skillful builders, birds weave nests of dead grass and straw, twigs, scraps of cloth, mud, hair and other materials.

The water in lakes and ponds gets warmer and spring winds help cause a thorough mixing of the water. This mixing hastens nutrient release from the bottom sediment and fuels the aquatic food chain. Aquatic plant growth is slow, but bass and crappie feed actively. Near the end of the month, crappie start to spawn in larger lakes. Dedicated anglers prepare for tempermental weather and head for favorite fishing spots.

May is an active and exciting month. Farmers are busy planting and cultivating crops. Gardeners take advantage of warmer and longer days to plant vegetables. Friends of wildlife plant seeds and seedlings that will provide food and cover for birds and animals.

It is fitting that during the May planting season we recall the Dust Bowl days of our country because unwise use of the land can create dust bowls and deserts. Soil Stewardship Week is observed in May. The event is a reminder that man has a moral obligation to take care of the land because wildlife and man depend on the soil.

Warmth and moisture spark germination in wintering seeds. A huge supply of energy-rich seeds, including grain left after harvest, supplied food for wildlife during the fall and winter; some of these seeds remain and begin to sprout in the warm, moist soil.

May rains can fall as gentle showers or as violent thunderstorms that spawn tornadoes when cold and warm air masses meet. Runoff water forms temporary pools. In early May, the high-pitched trills of toads—musicians of the roadside ditches—fill the evening air. Toads lay eggs in temporary pools and the eggs must hatch and tadpoles turn into toadlets before the water disappears. You might hear the deep "ger-a-a-rum" of the bullfrog in late May. Bullfrogs lay eggs in more permanent waters because their tadpoles require 11 to 14 months to metamorphose and two to three years to mature.

Basic levels of the aquatic food chain become increasingly active. Plankton growth accelerates, creating "blooms" in the water, and insect larvae change into adult forms. Crappie are at the peak of their spawning season in May and warm stabilized waters stimulate bass nesting.

White-tailed deer bear young, usually twins, in late May or early June. New antler growth in male deer, bucks, is in the "bud" stage.

Many Missourians take to the fields to enjoy wildflowers. And about the time the May apple (mandrake) flourishes, men, women and children invade creek banks and wooded hillsides in search of morels...Outdoors in Missouri.

POSTER GUIDELINES

The spring poster emphasizes a forest land-use pattern. The land shown in the poster was probably a forest since the beginning of time. Many years ago, someone cleared a field on the distant hillside to grow row crops or provide pasture. New land-use decisions have now allowed the hillside to begin a natural succession back to forest...note the cedar trees. The cedars and emergent woody vegetation in the field will eventually be replaced by deciduous trees, depicted elsewhere in the poster.

Human activities portrayed include hiking, bird watching and canoeing. Many human activities coincide with the increased pace of life in the emerging spring forest. As long as land-use decisions favor maintenance of the forest, many human and wildlife activities will persist.

The forest depicted has this appearance briefly in early spring. Soon leaves will emerge from tree buds, wildflowers will be shaded out, and dead leaves on the forest floor will decompose, to be covered by understory vegetation. The woods will convey the closed look of summer.

The poster will be useful throughout the year in comparing a forest land-use pattern to those shown in other posters. It will help remind the children of spring vegetation, spring activities, and forest habitat...Outdoors in Missouri.

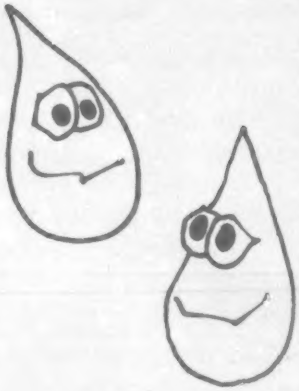
DRIP AND DROP

DID YOU KNOW? Water evaporates from the earth constantly. It goes into the sky to form clouds. Eventually, it returns to the earth as types of precipitation. This story will help children understand the water cycle (hydrologic cycle).

YOU'LL NEED: Felt flannel board characters and a flannel board.

WHAT TO DO: Read the children the following story.

Way, way up in the blue sky on a soft, white, puffy cloud live two very good raindrop friends—Drip and Drop.



Drip and Drop look alike; they are both wet and they like to do the same things. Some of their favorite things to do are skating down windows, sliding on umbrellas and hiding in puddles where someone will step and make them go splash.

Drip and Drop always have fun together, but they share the soft, white, puffy cloud with lots of other raindrops. Each day the sun brings more raindrops until the cloud is almost full.

Drip and Drop and all the other raindrops become very excited. Every raindrop knows that when the cloud gets full of raindrops, it's time for a big rain. Being part of a big rain is the most fun thing in the world for a raindrop. All the raindrops and Drip and Drop were so excited that they could hardly wait for the rain to start.

At last, the day came. The cloud was so full of raindrops that it couldn't hold any more—not even one. The sun slid behind the cloud and the rain started to fall. All of the raindrops came laughing and dancing, trickling and rolling to earth. Each was going to have his own adventure.

Drip's adventure took him for an exciting ride down a mushroom-shaped umbrella. After swinging on the end for a little while, he leaped right into a nice big puddle.

While Drip was taking his umbrella ride, Drop was having a good time by skating backwards down a big window. When he got tired of skating, Drop plopped happily into a nearby puddle.

As the rain went on, Drip and Drop and all the other raindrops had a good time splashing in their puddles. They would wait quietly for someone to step in their puddle. Then they would splash in the air, do a somersault or two and land safely back in their puddle waiting for the next splash.

But by the time night came, Drip began to miss Drop and Drop became lonesome for Drip. They began thinking of all their raindrop friends and the big, white, puffy cloud. They were so sad that they hid their heads and cried themselves to sleep.

Pretty soon it was morning. They could feel the bright sun shining on them, warming them up.

As Drip stretched and looked around, he noticed that his puddle was getting smaller. The sun was drying it up.

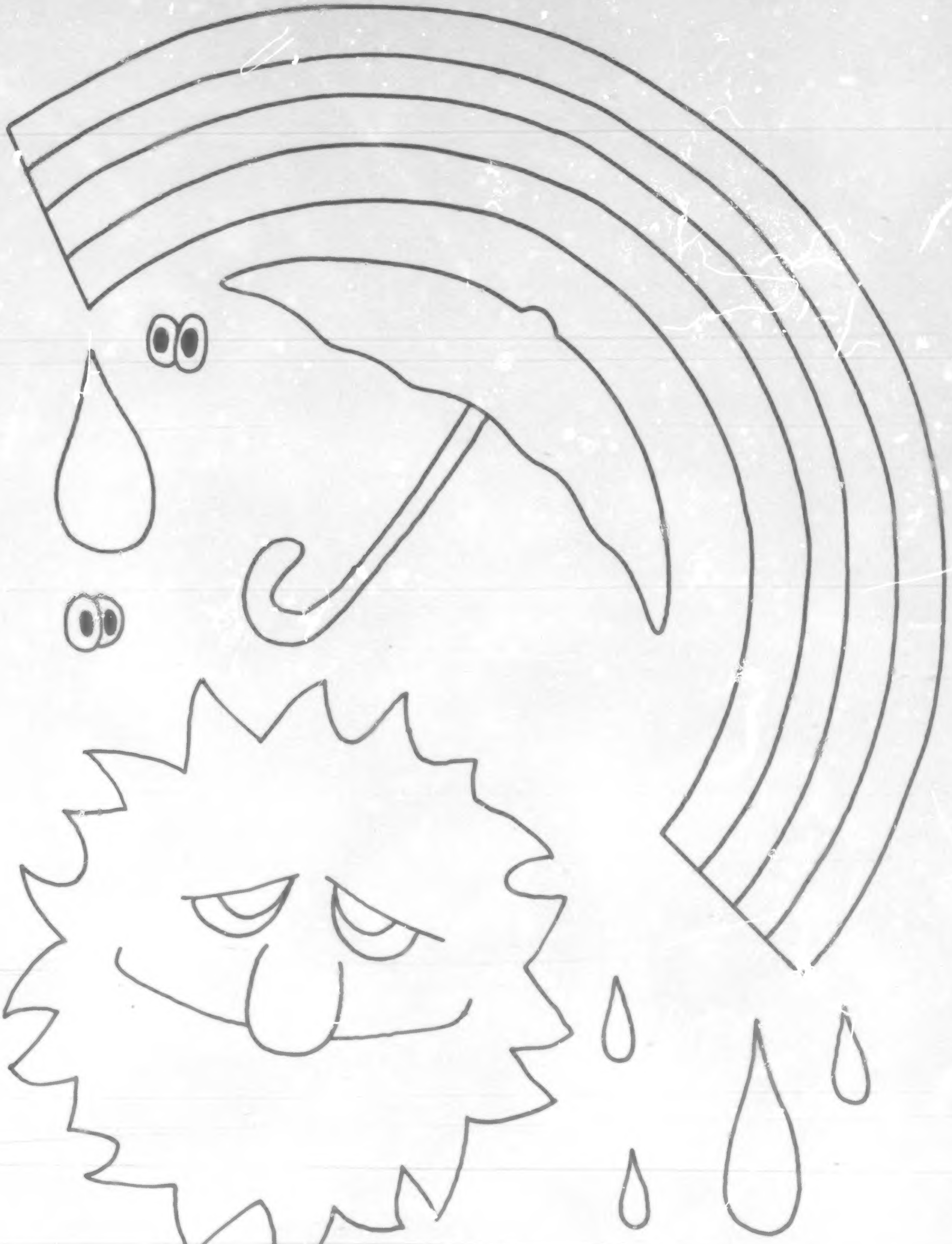
Drop noticed that his puddle was getting smaller too. As the sun shone brighter and the day got warmer, Drip and Drop felt the sun's rays lifting them up and carrying them back to the white, puffy cloud in the blue sky. The same thing happened to all the other raindrops. Drip and Drop were so happy to see each other they hugged. Then all the raindrops hugged because they had missed each other. All of the raindrops were glad to see their friends and be at home in the soft, white, puffy cloud.
Then the sun gave them a big surprise. He smiled on the raindrops and made a rainbow.

Talk with the children about what happened to Drip and Drop. How did they get back in the cloud? Does this really happen or is it pretend? Discuss other forms of precipitation and the importance of precipitation to the plant and animal world.

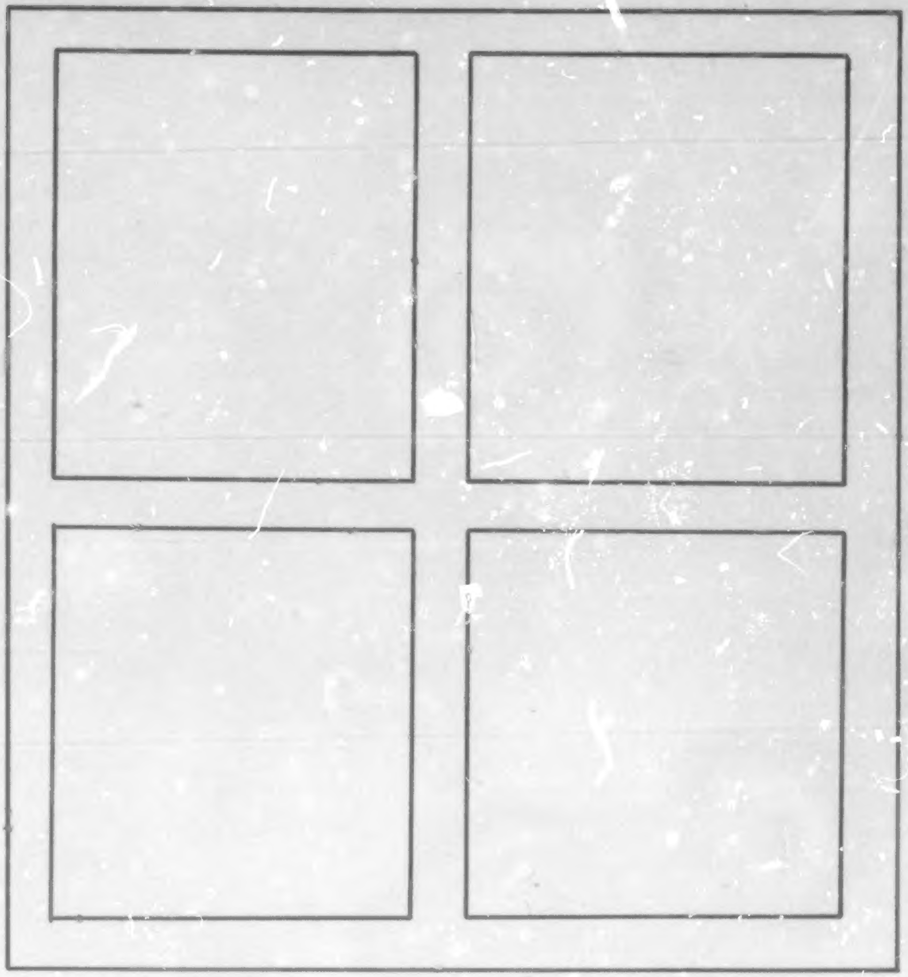
SUPPLEMENTARY ACTIVITIES:

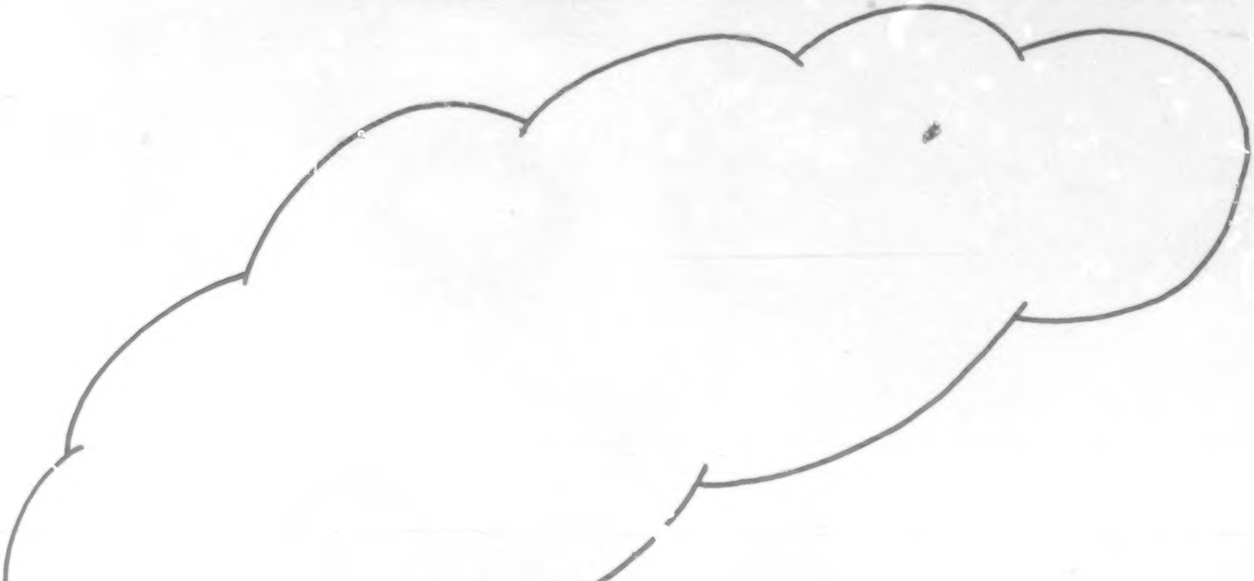
1. Have children retell the story using the flannel board pieces.
2. Have children make a rainbow by gluing colored yarn on construction paper.
3. Catch a raindrop. Put flour in an aluminum pie plate and take it outdoors on a rainy day. Let a few raindrops fall into it and bring it back inside. After it dries, pick out the raindrops. Talk about how big they are.
4. Observe a puddle. Discuss how it gets smaller as the sun gets hotter. Talk about what happens to the puddle.
5. Hang dripping wet clothes outside on a sunny day. Discuss where the water goes when they dry. Make clothesline pictures by gluing string and pictures of clothing on construction paper.
6. Tear white paper and glue onto blue paper to look like clouds.
7. Make a cloud by putting several inches of hot water into a cold jar. Put the lid on and place an ice cube on the lid. As the warm air rises, it is cooled and forms fog or a little cloud.
8. Water paint in the sun and shade. Observe what happens to the water.

DRIP AND DROP



DRIP AND DROP





THREE RAINDROPS

DID YOU KNOW? Rain helps water plants and keeps them from dying. This song will help children understand why we need rain and from where it comes.

YOU'LL NEED: A rainy day.

WHAT TO DO: Teach the children the following song to the tune of Three Blind Mice:

Three raindrops.
Three raindrops. (hold up three fingers)
See how they fall.
See how they fall. (make fingers fall like raindrops)
They all fall down from the clouds in the sky.
They water the plants so they won't die.
The plants feed the animals who live nearby.
Three raindrops. (hold up three fingers)

Talk with the children about how the rain helps us and why it is important. What would happen if it never rained?

SUPPLEMENTARY ACTIVITIES:

1. Paint different colored shapes on a sheet of paper. After letting it dry, put it outside in the rain for a moment. When you bring the painting inside, hold it flat so the raindrops won't roll off. Let the rain dry and see the pretty picture it made.
2. Take a rain walk. Talk about how rain smells, feels, sounds, and tastes. Discuss how things change colors when they get wet.
3. Put out raincoats, hats and umbrellas in the housekeeping area.
4. Make storm pictures by finger painting with dark blue and sticking yellow yarn to it for lightning.

LET'S MEASURE THE RAIN

DID YOU KNOW? Farmers, weathermen and many other people measure all the precipitation that the earth gets. They record it and keep track of how much each area gets from year to year. This activity will demonstrate to children how to measure rain.

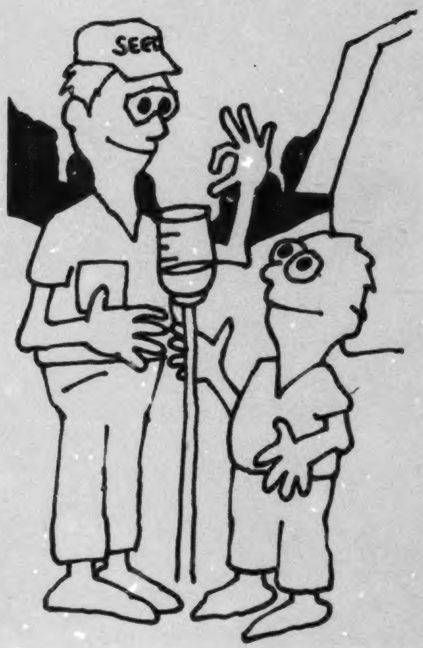
YOU'LL NEED: A tall glass jar with straight sides, a ruler, fingernail polish and a hard rain.

WHAT TO DO: Mark the side of the jar in centimeters with the ruler and fingernail polish. Put the rain gauge in an open area near the school. After a rain, read on the side of the jar how much rain fell, empty the jar and leave it until the next rain.

Talk about the amount of rain there is in the jar. Does it rain more in some places than in others? (Put out two gauges—one under a tree and one in the open.) Does it rain more in one season than another?

SUPPLEMENTARY ACTIVITIES:

1. Make a weather calendar. Keep track of what the weather is each day and record the amount of rain.
2. Display pictures of rain, clouds and rainbows.
3. Let the children pretend to be raindrops to music or let them act out how the rain makes them feel.



WHERE DO ANIMALS GO WHEN IT RAINS?

DID YOU KNOW? During heavy rains animals need protection. They hide in caves, under trees or other vegetation, in hollow trees or logs, etc. This activity will encourage children to think about where animals go for protection and when and if they seek protection.

YOU'LL NEED: Animal cards and pictures of a cave, hollow tree, mushroom, rock, leaf or other places an animal may go when it rains.

WHAT TO DO: Ask the children where they go when it rains. Most will probably say inside their house or school. Ask them where they would go if there weren't any buildings nearby. Discuss their answers.

Ask for some places animals might go when it rains. Show them the animal cards and discuss where each animal might go in the rain. Let them match the animal cards to your pictures of possible hiding places. Look at the four season posters and discuss possible hiding places in each of them. Discuss the idea that some animals don't seem to seek much shelter.

SUPPLEMENTARY ACTIVITIES:

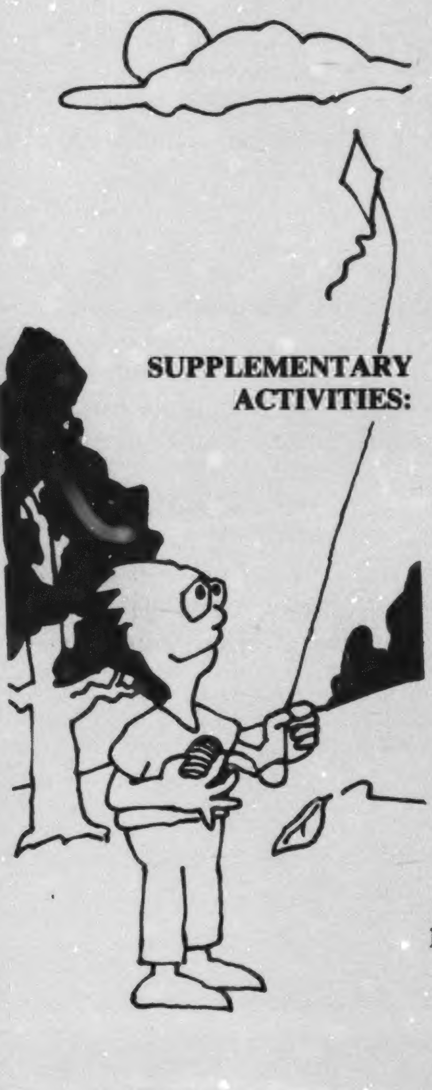
1. Put out twigs, branches and animals in the block area. Encourage the children to find places for the animals to hide in the rain.
2. Lay cutouts of animals on a piece of paper. Cover with a screen and rub with a toothbrush that has been dipped in paint. When you remove the animal cutout, it looks like it's raining on the animal.
3. Have animal crackers for snacks and review where animals go in the rain.
4. Read the book *Where Does the Butterfly Go When It Rains?* by May Garelick; Young Scott Books, New York, NY, 1961, to the children. This story explores where various animals go to get out of the rain.

HOW STRONG IS THE WIND?

DID YOU KNOW? Wind is the movement of air. There is wind everywhere there is air. Wind carries weather from one place to another. This activity will help children notice the wind and help them to consider its strength. It will also show them some ways man uses the wind.

YOU'LL NEED: A large piece of cardboard, four pieces of 12" string for each child, a paper clip and napkin for each child, scotch tape and a moderately windy day.

WHAT TO DO: Gather the children together outside. Ask if they can feel the wind. Discuss how the wind is stronger at some times than at others. Let the children experience the wind by running against it holding the piece of cardboard. Talk about the various ways the wind helps man: seed dispersal, transportation like balloons and sailboats, turning windmills, etc. Discuss ways that the wind is destructive: erosion, blowing down buildings, etc.



Have the children make parachutes by taping a string in each corner of a napkin. Attach the four strings together in the center with a paper clip. Let them fly the parachutes in the wind. Try it again on a calm day. Discuss the difference in how the parachutes float.

SUPPLEMENTARY ACTIVITIES:

1. Use crepe paper streamers or scarves and dance to music in the wind.
2. Fly a kite on the play yard.
3. Blow up balloons and take them outside on a windy day. See how far they will go.
4. Make sailboats from styrofoam, straws, and paper. Let the children sail them in a puddle or make a pond in the sand box.
5. Make kite pictures by printing the kite with a sponge. Use a string with tissue paper glued on for the tail.
6. Blow bubbles in the wind.
7. Let the children blow paint by dropping paint on construction paper and blowing at it through a straw.
8. Tie strips of crepe paper to the climber or wheel toys.
9. Display pictures of how the wind helps man and the harm it can do.
10. Read the book *Gilberto and the Wind* by Marie Hall Ets, The Viking Press, New York, NY, 1963, to the children. Gilberto has a fun day seeing all the wind can do.

WHAT MAKES A SHADOW?

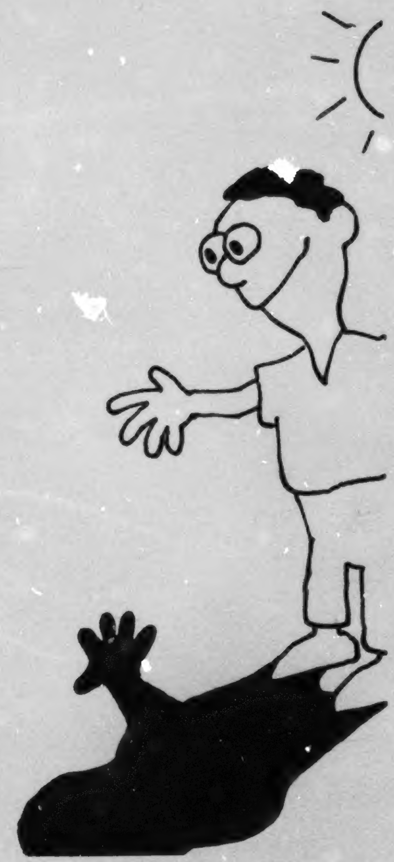
DID YOU KNOW? Shadows are made by something between the earth and the sun. Clouds often make shadows on the earth. A cloudy day is a time when we are in the shadow of large clouds. This activity will demonstrate to the children how shadows are made.

YOU'LL NEED: A strong flashlight and a doll.

WHAT TO DO: Ask the children if they know how to make a shadow. Discuss their response. Demonstrate how to make shadows by holding a flashlight high up and holding a doll between the flashlight and the ground. Show the children how long and short shadows are made by the position of the light. Explain that the light is like the sun. Take the children outside and look for shadows. Discuss cloud, tree, building and people shadows. Talk about how your shadow moves when you do.

SUPPLEMENTARY ACTIVITIES:

1. Have children step on each other's shadows while playing outside.
2. Measure shadows at different times of the day. Mark it on the ground in the morning and stand in the same place after lunch and see if the shadow is the same size.
3. Play "whose shadow?" Hang a sheet in the classroom with a strong light behind it. Have the children hide their eyes while one child at a time goes behind the sheet. The rest of the children guess whose shadow they see.
4. Let the children play in the light of the movie projector after a film.
5. Play lose your shadow. Encourage the children to find shadows to hide in so they won't have a shadow. Let them run from their shadow and try to lose it.
6. Draw around children's shadows and let them fill in the features.
7. Read the book *The Shadow Book* by Beatrice Schenk DeRegniers, Harcourt Brace Jovanovich, Inc.; New York, NY, 1960. This is a story of shadows and how they follow a child through a day.



WHAT IS SOIL?

DID YOU KNOW? Soil is the most important resource of the earth's crust. It is formed by little pieces of ground-up rocks and decayed bits of plant and animal life. This activity will help children understand how soil is made.

YOU'LL NEED: Crumbly rocks, newspaper and a hammer.

WHAT TO DO: Put the crumbly rocks on the ground or on a large rock. Cover them with several layers of newspaper. Let the children pound the rocks with the hammer until they are as fine as you can make them. Tell the children that this is how soil is made. Ask if they can think of how nature pounds the rocks to grind them up. Discuss how waves and rain pound the rocks. Discuss the role of glaciers grinding rocks beneath tremendous weight. Is this taking place today?

SUPPLEMENTARY ACTIVITIES:

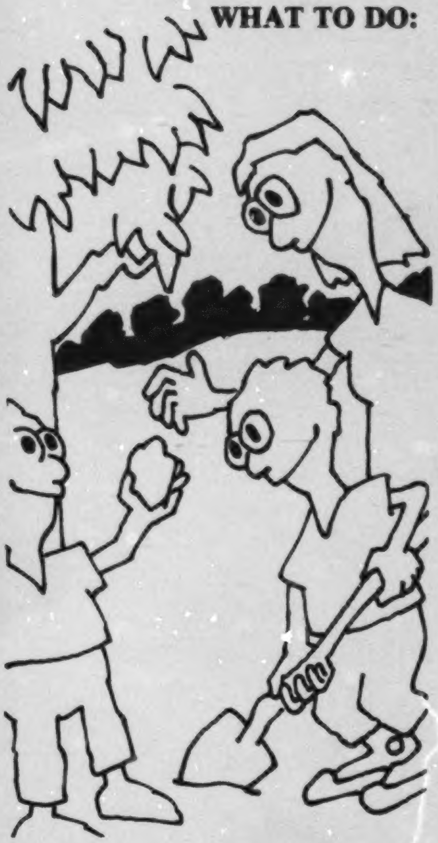
1. Plant something in the soil you made.
2. Read the book *The Compost Heap* by Harlow Rockwell, Doubleday and Company, Inc.; Garden City, NY, 1974, to the children. This demonstrates how to make a compost heap and how it turns into soil.

MUD PIES

DID YOU KNOW? There are several different types of soil. Clay soil is fine and light in color. When water is added, it gets sticky. Gravel soil is coarse with little rocks in it. Sandy soil feels gritty. Loam soil is a mixture of sand and clay. Humous soil is very dark and loose. It contains bits and pieces of decayed animals and plants. This activity will help children become aware that there are different kinds of soil.

YOU'LL NEED: Shovels, pie pans, a magnifying glass and water.

WHAT TO DO: Help the children dig up a small amount of soil from the play yard and place it in a pie plate. Crumble it with your fingers and let the children feel it. Talk about how it feels. Is it rough, soft or dry? After everyone has explored the texture, help the children look at it under a magnifying glass. Discuss with the children its appearance and color. Compare it with sand and other types of soil from the play yard. How are they alike and different? Ask questions about what soil is good for, how man uses it and what lives in it. Find and discuss earthworms and their role as soil builders.



Talk with children about how mud is made. Make a large poster to display their various recipes. Make some mud pies with soil and some with sand. Talk about the different textures and colors. Talk about how different it feels and looks when it is wet as opposed to when it is dry. Look at mud under the magnifying glass. Does it look different from soil? Let the children play with and explore the mud.

SUPPLEMENTARY ACTIVITIES:

1. Have the children bring soil from their backyards. Compare these types of soil with the ones taken from the play yard. Are they alike or different? Are the colors the same or different?
2. Make mud pies from several different types of soil and place in a shady, dry spot. Notice which type dries fastest.
3. Let the children mud paint with their bare feet.
4. Fill a jar with coarse soil and add water. Shake it and see what happens. Let it sit for a day or so and see how layers are formed with the water becoming almost clear.

WHAT IS EROSION?

DID YOU KNOW? Erosion is caused by wind and rain on soil with no plants to hold it in place. Erosion causes precious topsoil (the best for growing things) to end up at the bottom of hills, streams, rivers and oceans. This activity will demonstrate erosion.

YOU'LL NEED: A small fan, a hose or bucket of water and a pile of dry sand or soil.

WHAT TO DO: Gather the children outside around the soil or sand pile. Ask them to make a hill in the soil. Pretend that the hill has just been plowed by a farmer. A big wind storm is coming; the wind is blowing really hard. What will happen to the soil? Demonstrate with the fan. Now try the fan on the grass. Why does the bare soil blow away but not the grass or the soil where grass is growing?

Repeat the experiment using water from a hose or a bucket.

SUPPLEMENTARY ACTIVITIES:

1. Display pictures of soil erosion.
2. Look for evidence of erosion on the play yard.
3. *Tell* the story of the *Little Stream* by Jim Keefe and Jim Keller available from the Missouri Department of Conservation.
4. How would the stream in the spring poster look if a bare field was next to it?

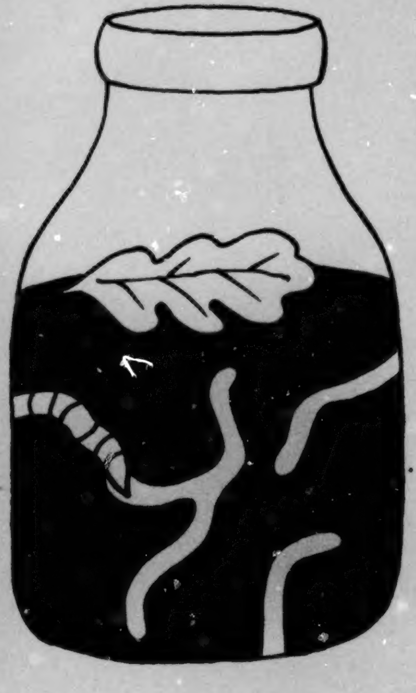
LET'S MAKE A WORM RANCH

DID YOU KNOW? Earthworms help the soil. They live in tunnels in the soil. They eat bits of decayed plants and animals that are in the soil. The tunnels they make let air into the soil and help stir it up. This activity will help children become more aware of the importance of the earthworm.

YOU'LL NEED: A large jar, rocks, soil, leaves, some worms, worm food (coffee grounds, lettuce, egg shells, grass clippings, etc.) and some black paper.

WHAT TO DO: Ask the children if they know where earthworms live. Discuss earthworm homes and what worms eat. Show the children a live worm and watch it move. Show them how to tell the front from the rear. The front end of the worm has a mouth. The worm also moves forward, not backwards. Put some coffee grounds by the mouth and see if it will eat. Talk about how the earthworm helps the soil by mixing it up and letting in air. It also keeps the soil loose.

Place a few rocks in the bottom of a large jar to make a worm ranch for the children to watch. Add soil and dry leaves. Put several worms in the jar. Put about a teaspoon full of coffee grounds or other worm food on top of the soil and keep it moist but *not wet*. Cover the oustide of the jar with dark paper. Explain to the children that the worms don't have eyes or ears but are very sensitive to light. They only come out at night to look for food. Every few days, look at the tunnels the worms have made along the glass.



SUPPLEMENTARY ACTIVITIES:

1. After a rain, look for worms on the sidewalk. Discuss why the worms came out of the ground. Like people, they need air to breathe. If they stay in the ground, they will drown.
2. Look for earthworms that have dried up in the sun after a shower. Explain that although the earthworms need air, they must be moist and cool in order to live.
3. Make a spot to see earthworm tracks. Pour a bucket of water over some soil in the play yard. Make it very muddy. Leave it alone and come back the next day to see if you can find some worm tracks.
4. Dig in the soil and look for earthworms and other animals that live in the soil.
5. Discuss what enemies an earthworm might have.
6. Talk about how earthworms hibernate deep in the ground during the cold winter.
7. Let the children pretend to be worms. Encourage them to pantomime how earthworms move.
8. Make worm puppets out of socks—they don't need any eyes or ears.
9. Make "worm pictures" by letting a muddy worm crawl across a piece of white paper.
10. Read the book *Our Earthworms* by Herbert H. Wong and Matthew F. Vessel, Addison-Wesley; Reading, MA, 1977, to the children. The story illustrates the characteristics, habits and usefulness of the earthworm.

WHERE DO ALL THE DEAD LEAVES GO?

DID YOU KNOW? Dead plants and animals decay and become part of the soil and help improve it. This activity will help children understand what "decay" means.

YOU'LL NEED: Some dead leaves, an orange peel and a piece of rock or glass and a shovel.

WHAT TO DO: Ask the children if they know what happens to all the leaves that come off the trees in the fall. Discuss the word "decay" with them. Talk about how dead things appear to melt back into the ground and help make the soil better able to grow things.

Take the leaves, orange peel, rock or glass and anything else you might like to try and bury them in a corner of the play yard. Discuss which items will decay and which won't. Mark the spot and dig up the items after several days, after a week, after two weeks and after a month. Discuss the changes that have taken place.

SUPPLEMENTARY ACTIVITIES:

1. Fence in a very small area near your school and make a compost pile for your garden.
2. Discuss the leaves on the ground in the spring poster and how they are decaying. Decay proceeds slowly when the temperature is cool but now that the warmth of spring is present, decay will proceed more quickly.
3. Read the book *The Dead Tree* by Alvin Tresselt, Parents Magazine Press; New York, NY, 1972, to the children. The story demonstrates what happens to a tree when it dies.

HOW DOES YOUR GRASS GROW?

DID YOU KNOW? Spring rains and melting snow give the soil moisture and causes seeds to swell. The sun's warmth helps them to grow into small plants. This activity will help children understand how plants are dependent on soil and weather.

YOU'LL NEED: One styrofoam cup per child, some grass seed (annual rye grows quickly), magic markers and soil.

WHAT TO DO: Tell the children that you are going to plant some grass seed and ask what you'll need. Discuss why each element—soil, seed and water—is necessary. Let each child fill his/her cup with soil. Sprinkle the seeds on top and water. On the front of the cup help the child draw a face with the magic markers. Explain that the grass will be the hair. Construction paper ears, tie, etc., can also be added. Put the cups in a sunny window and wait a few days.

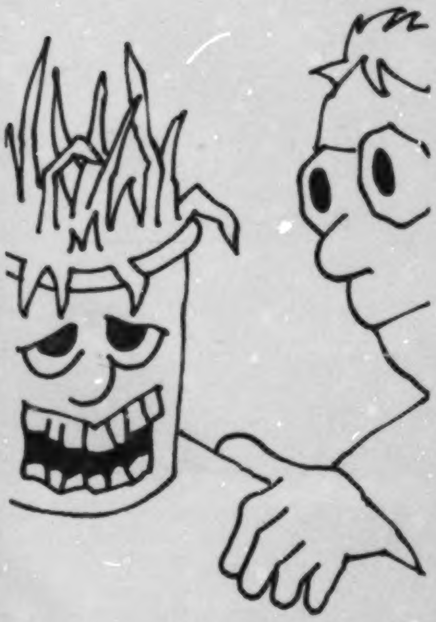
Plant some extra cups and put them in a dark place. Ask the children what they think will happen to those plants. After the grass sprouts in the sunny spot, compare it to the grass placed in the dark. What happened to the plants in the dark?

After the grass gets fairly long, let it wilt before you water it. Discuss how plants need water or they will die. Talk about how plants eat and drink through their underground roots.

When the grass has grown rather long, let the children cut it out and style the hair for their cup. Talk about how they need to be gentle with the grass plants or they will pull them up or kill them.

SUPPLEMENTARY ACTIVITIES:

1. Try several other planting activities, such as:
   - a. Plant a bean seed on a damp paper towel in a ziplock bag and tape it to the window.
   - b. Have each child bring an old tennis shoe from home and plant a tennis shoe garden.
   - c. Start a sweet potato vine.
   - d. Plant a garden in the play yard.
2. Make flowers with egg cartons, construction paper and pipe cleaners. Cover a milk carton, decorate, fill it with styrofoam or old playdough and use it for a vase.
3. Use artificial flowers and vegetables in the block area to plant a garden.
4. Display gardening gloves, hats, tools and empty seed packets in the housekeeping area.
5. Make a paper garden with muffin cups, straws and construction paper.
6. Display pictures of gardens and point out neighborhood gardens.
7. Discuss the plants that are beginning to grow on the spring poster.



I'M RED, YOU'RE ORANGE

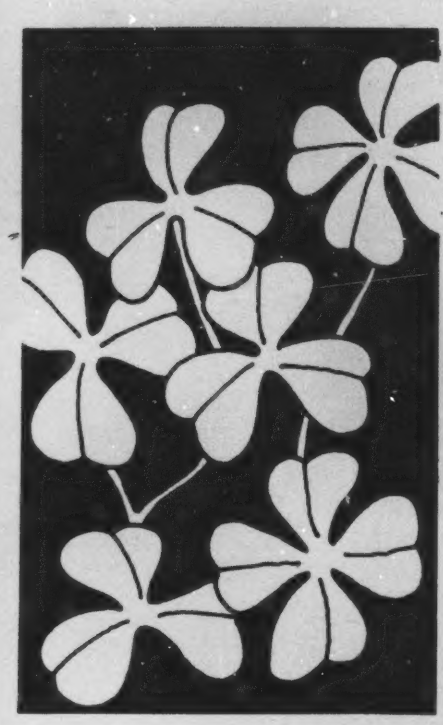
DID YOU KNOW? Seeds provide food for animals and new growth to hold the soil in place. This activity will help children realize that not all seeds are alike. Different seeds grow different plants and seeds are transported by the wind or by animals. The activity will also demonstrate how the roots and stem of the plant grow from the seed.

YOU'LL NEED: Felt characters and a flannel board.

WHAT TO DO: Read the following story to the children.

Do you know that most clover plants have three leaves?

Once there was a clover plant that grew out of the ground. One day the sun began to shine and the clover seeds dropped off the clover plant. One seed was different than the others. He was orange, the other seeds were red. His name was Keegan.



When the other seeds saw that Keegan was orange, they said, "Go away, get out of here. You are orange and we are red. We don't like you."

Keegan said, "But I'm a seed, just like all of you. I can't help it if I'm a different color. Please be my friends."

"Go away orange face," said the red seeds.

Keegan was very sad. "Nobody wants to be my friend," he said. And the wind blew him away—WHOOSH!

Keegan rolled by two flies. "Ha! Ha!," they laughed. "Look at that funny orange seed."

"Nobody wants to be my friend," said Keegan, and he was very sad.

Keegan rolled by an earthworm who stuck it's head out of its hole. "My! What a funny colored seed!" said the earthworm.

"I wish I was red like the other clover seeds," said Keegan.

Then Keegan rolled by a bird. "Ummm! Something to eat," said the bird. The bird grabbed Keegan in his beak and flew high up in the air.

"Will you be my friend?" Keegan asked the bird.

The bird opened his beak to say "I'm going to eat you," and out popped Keegan. Down, down, down fell Keegan. BOING! Keegan hit the ground and bounced into a crack.

"How will I get out of here?" thought Keegan. Keegan couldn't get out of the crack and he was very tired. Soon, he fell asleep and he slept for a very long time. While he was asleep it began to rain. And the rain washed the soil into the crack where Keegan was sleeping. Keegan slept on, buried in the soil. The sun was shining when Keegan woke up. Keegan felt very strange.

"I'm splitting open!" cried Keegan. A green arm grew up out of Keegan, a brown arm grew down. "I'm growing into a plant!" said Keegan. "The green arm will be a clover plant and the brown arm will be a root," said Keegan. Keegan began to grow bigger...and bigger...and bigger...until...he grew into a beautiful clover plant and each stem had *four* leaves.
All the animals and bugs heard about the clover plant with four leaves and they all came to see the beautiful clover plant that Keegan grew.

"It's beautiful!" said the flies.

"All the other clovers have only three leaves," said the worm.

"That orange clover seed was very special," said the bird.

The same day that Keegan grew into a beautiful clover plant, a small boy came walking by him. It was Saint Patrick's Day and the boy needed a clover leaf. He saw the plant that Keegan had grown and said, "Oh, boy! A lucky four-leaf clover! Now I'll be extra lucky on Saint Patrick's Day." He picked a four-leaf clover off the plant that Keegan grew and stuck it in his buttonhole. "Now I have a special four-leaf clover for Saint Patrick's Day."

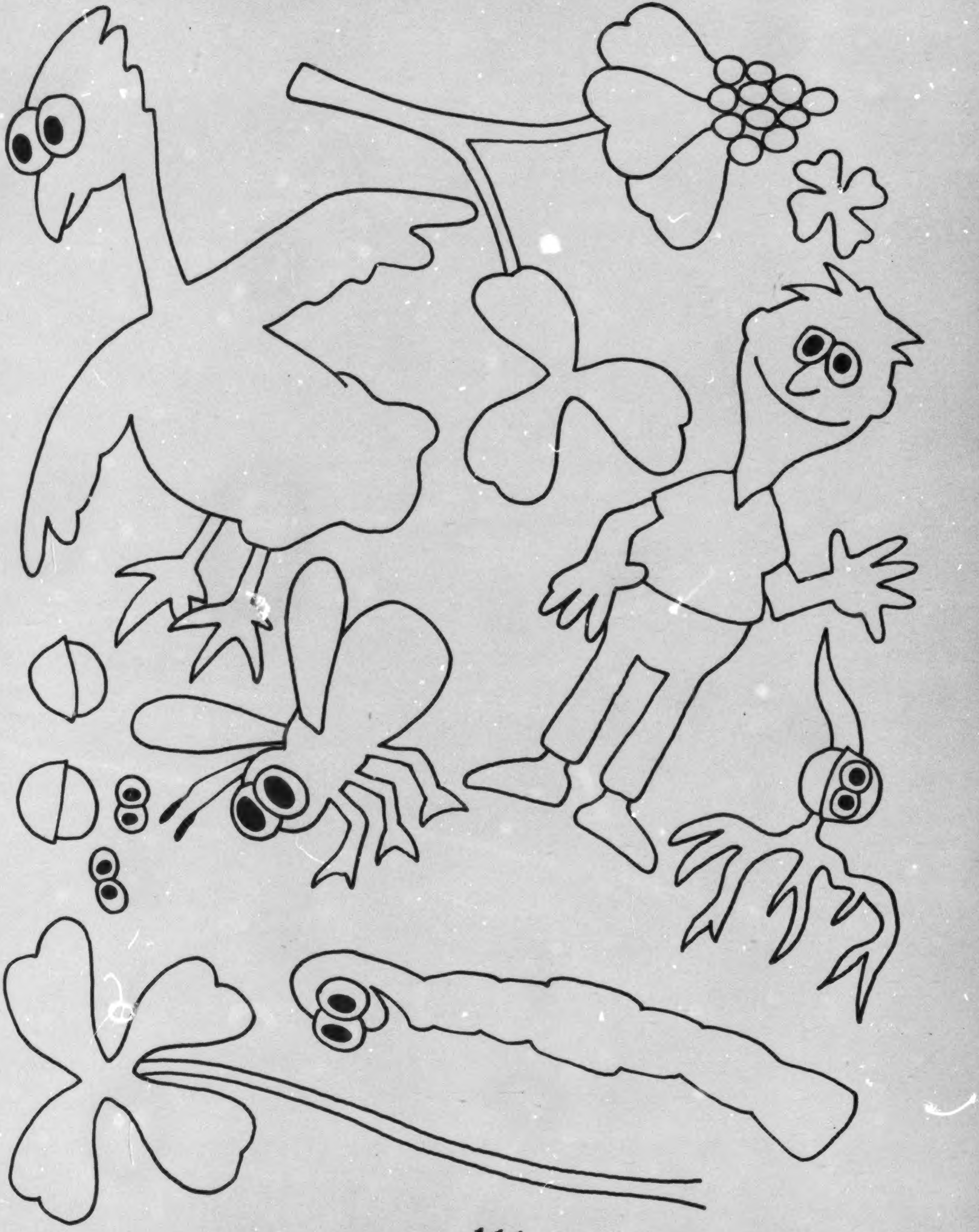
Down in the ground Keegan heard the small boy and Keegan was very proud and happy.

By John Griffin

SUPPLEMENTARY ACTIVITIES:

1. Discuss the "pretend" nature of the story.
2. Look for clover plants on your play yard.
3. Plant some clover.
4. Discuss the parts of the plant shown in the felt characters.

I'M RED, YOU'RE ORANGE



A PLANT PUZZLE

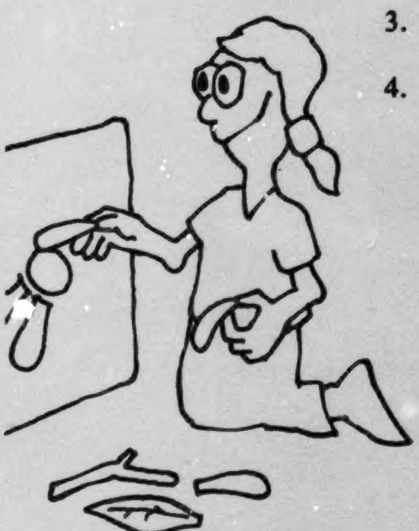
DID YOU KNOW? Plants have several different parts and each part is important. This activity will help children become aware of the various parts of the plant and the importance of each.

YOU'LL NEED: A felt plant puzzle with roots, stem, leaves and flowers and a flannel board.

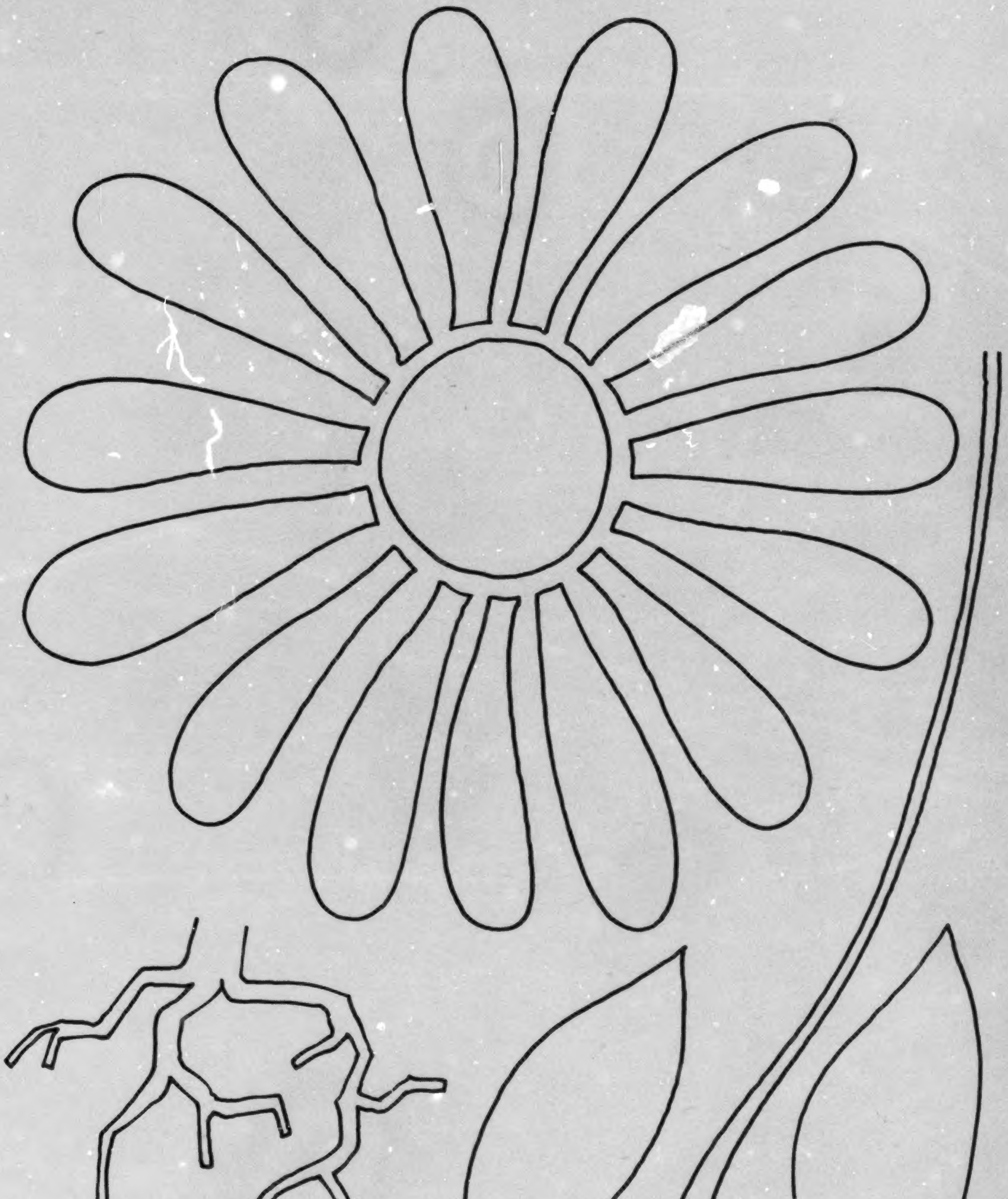
WHAT TO DO: Put the plant puzzle roots on the flannel board. Ask the children what this part of the plant is called. Explain that it's the roots. Explain why the roots are important to the plant. Discuss how the plant uses the roots to hold on during wind and rain storms. The plant also absorbs food and water with the roots. Now add the stem. Discuss which part of the plant is the stem. Talk about the importance of the stem. It holds the plant up off the ground and carries food and water to other parts of the plant. Next add some leaves. Ask the children what these are called. Tell the children that the leaves make food for the plant with the help of sunlight. Additional food and water is carried to the leaves from the soil by plant roots. Now add the flower. Discuss how pretty it is but ask if that's the only reason a plant has flowers. The flowers make seeds so that next year there will be more plants.

SUPPLEMENTARY ACTIVITIES:

1. Let the children put the plant puzzle together on their own.
2. Look at a live plant and identify the various parts. Pull up a weed and discuss its parts. A dandelion works well.
3. Look for examples of roots, stems, leaves, flowers on the spring poster.
4. Look for examples of roots, stems, leaves, flowers in the play yard or the neighborhood.



A PLANT PUZZLE



MOLLY AND THE FOREST FIRE

DID YOU KNOW? Spring is the time of year when most forest fires occur. This activity will help children become aware of the fact that most forest fires are caused by careless people. It will also point out some of the consequences of forest fires.

YOU'LL NEED: Felt characters and a flannel board.

WHAT TO DO: Read the following poem to the children.

Molly was a small bird.
Her home was in a tree.
A forest grew around her
as far as she could see.

Big trees, little trees,
trees with holes inside
made good homes for animals,
where they could go and hide.

Molly woke up with the sun.
Each day she'd scratch and pick
and if she saw a bug or seed
she'd chomp it up real quick.

Each night she'd fly up to her hole,
High upon the tree.
There she was safe from being eaten,
by things she couldn't see.

Molly watched the other animals
from high up in the tree.
Raccoons and deer and fox squirrels
and turkeys she could see.

The forest was their home,
Like a house for you and me.
These critters would not be there,
if they didn't have those trees.

One day a man came hiking
to find a good campsite.
He started up a campfire
to keep him warm that night.

Early in the morning
the camper walked away.
He left his campfire burning
in a very careless way.

Soon the fire got bigger.
It flamed and cracked and popped.
The fire made Molly frightened.
She chirped and flapped and hopped.

WHOOSH, the wind came blowing.
It blew the flames about.
ROAR, the fire grew bigger,
no one to put it out.

Smoke and flames, burning heat,
burning trees and ground.
Molly had to fly away.
She couldn't stay around.

She spent the night high in a tree,
next to a little stream.
The smoke and flames had scared her
like a very bad, bad dream.

The next day she went flying.
She flew back to her home.
The forest floor was blackened ashes
And all the brush was gone.

Bugs, seeds, acorns, leaves
were ashes on the ground.
Not a single deer or squirrel
or critter could be found.

Molly couldn't stay around
when all her food was gone.
Molly had to fly away
and find another home.

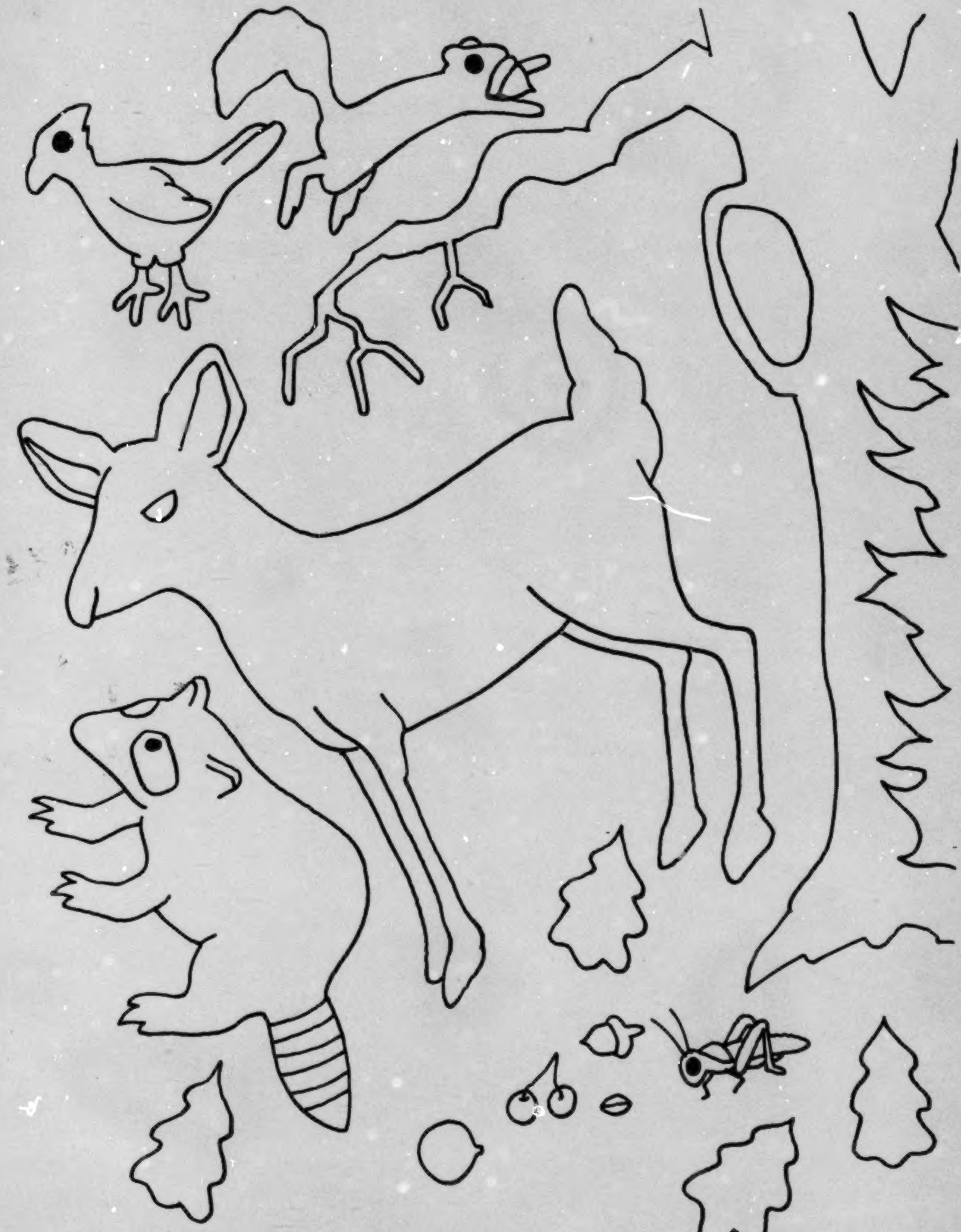
The forest soil will wash away
whenever there's a rain.
And years will pass before the woods
will be the same again.

by John Griffin

SUPPLEMENTARY ACTIVITIES:

1. Put out firemen dress-up clothes in the dramatic play area.
2. Make trees from twigs and clay for the block area and encourage the children to pretend that the trees are on fire and they will put out the fire.
3. Use black chalk on white paper to make pictures of a forest after a fire.
4. Let the children pretend to build campfires and put them out on the play yard.
5. Build a campfire and roast hot dogs and marshmallows on it. Then let the children help put it out properly under close supervision.
6. Display pieces of burned wood in the science area so the children can see what a tree might look like after a forest fire.
7. Display pictures of forests before and after fires.
8. Use films and posters featuring Smokey the Bear, available from the U.S. Forest Service.

MOLLY AND THE FOREST FIRE



MY FRIEND LITTLE CATERPILLAR

DID YOU KNOW? Butterflies and moths go through several stages of development. This song will help children relate to those changes.

YOU'LL NEED: The butterfly animal card.

WHAT TO DO: Teach the children the following song to the tune of "Twinkle, Twinkle Little Star:"

My friend little caterpillar (pet them)
Eats green leaves until they fill her. (make a fist with
Then she spins a small cocoon. thumb in the middle)
There she sleeps and very soon (put thumbs together and
spring will come and by and by flat hands)
She'll become a butterfly.

Discuss the changes that the caterpillar makes to become a butterfly.

SUPPLEMENTARY ACTIVITIES:

1. In a box, display the stages of the butterfly with a clay caterpillar, a cotton cocoon and a butterfly.
2. Have the children pretend to be caterpillars and pantomime the changes they go through to become a butterfly.
3. Make caterpillars from egg cartons. Then make butterflies by using straight clothespins and gathering colored tissue paper on them. Use pipe cleaners or twist ties for the feelers.
4. Find a cocoon and keep it in a safe place so the children can see the butterfly emerge.
5. Bring in a caterpillar for the children to observe.
6. Discuss such ideas as caterpillars eating a great quantity of plant leaves but birds eat a lot of caterpillars.
7. Read the book *The Very Hungry Caterpillar* by Eric Carle, Collins World; Cleveland, OH, 1969, to the children. It is a story of a caterpillar who eats and eats and eats. Then he spins a cocoon and becomes a butterfly.

WHAT'S THE DIFFERENCE?

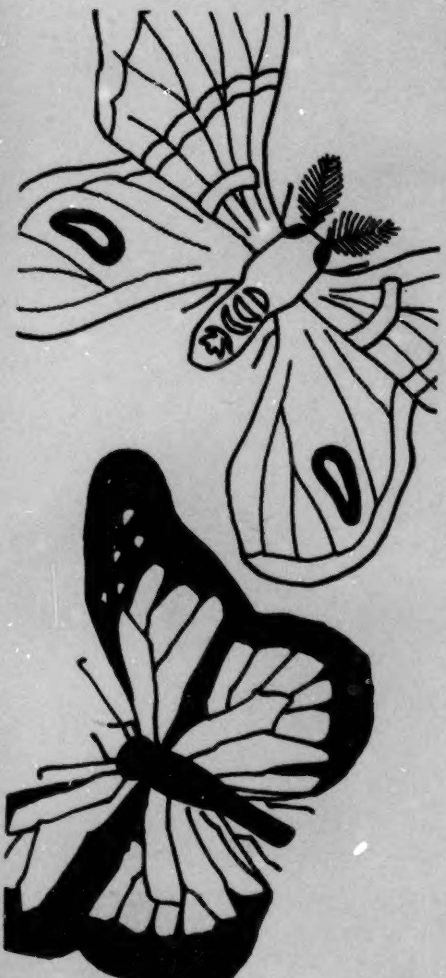
DID YOU KNOW? Moths are different than butterflies. They have thicker bodies and are usually larger. When moths rest their wings they spread them out and butterflies keep theirs folded above them while they rest. Butterflies have little knobs on their feelers. This activity will help children discover some differences between moths and butterflies.

YOU'LL NEED: A dead moth, a dead butterfly and a magnifying glass.

WHAT TO DO: Show the children the moth and the butterfly. Discuss how the two are different. Tell the children which is the moth and which is the butterfly. Let them examine them closely with a magnifying glass. Make a poster of the differences they find.

SUPPLEMENTARY ACTIVITIES:

1. Look for butterflies and moths on the play yard.
2. Blot paint a folded paper and see if it looks like a butterfly or a moth.
3. Talk about how baby caterpillars are hatched from eggs laid by the butterfly or moth.



WHAT'S AN INSECT?

DID YOU KNOW? Over half of all living things in the world are insects. Insects have six legs, three body parts, a pair of feelers and are covered with "chitin," a light, flexible, waterproof substance. Most insects have wings. Insects are an important part of many food chains.

YOU'LL NEED: A dead grasshopper, cricket, cockroach, caterpillar, butterfly, ladybug, dragonfly, etc., a magnifying glass, ink pad, crayons, and drawing paper.

WHAT TO DO: Start an insect collection for your classroom. Display the insects in a box in the science area and talk with the children about handling them gently. Point out the distinguishing characteristics that insects have, such as: six legs, feelers, etc. Discuss what and how the insects eat, how they move, where they live, etc. Talk about how the insects might help or harm man. What animals eat insects? Talk about the differences between insects and spiders.

After discussing insects, help the children make insect pictures. Thumb and fingerprints made on paper make good bodies. Encourage the children to draw the correct number of legs, wings and feelers. Be sure to write their comments about the insects on their pictures.

Encourage the children to bring insects from home to add to the collection and observe the insects in their habitats on the play yard. Caution them about avoiding harmful insects such as bees, wasps, hornets, etc.

SUPPLEMENTARY ACTIVITIES:

1. Bring in live insects and observe them for a day.
2. Display pictures and items connected with bees and discuss how they help man. Sing "I'm Bringing Home a Baby Bumble Bee."
3. Make insects from pipe cleaners and egg cartons.
4. Pantomime how different insects move.
5. Put out wings and feelers in the housekeeping area for the children to pretend to be insects.
6. Listen outside for insect sounds.
7. Explore a magic circle—give children each a circle of yarn and lay it on the ground. Let the children explore the circle with a magnifying glass and discover the miniature insect world within the circle.

WHO AM I?

DID YOU KNOW? The cottontail rabbit is a very common wild animal. It eats green plants and is prey for many animals. It usually lives in brush rather than holes in the ground. This song will help children learn about the rabbit.

YOU'LL NEED: The animal card of the rabbit.

WHAT TO DO: Teach the children the following song to the tune of "Three Blind Mice:"

Long, skinny ears. (hold up finger behind head for ears)
A little white tail. (turn around and show bottom)
I hop all around (hop around)
and I live on the ground. (point to the ground)
I have big eyes so I can see, (put fingers around eyes)
Coyotes and foxes who'd like to eat me.
I nibble on green plants that I can see. (look around)
Who am I? (pretend to nibble)

Discuss with the children what rabbits eat. Talk about how the rabbit is prey for many animals including man. Point out the rabbit hunters on the fall poster. Talk about where rabbits live on the ground and the hiding places they might choose to get away from their predators.

SUPPLEMENTARY ACTIVITIES:

1. Make rabbit costumes with brown paper bags, cotton and construction paper.
2. Make rabbit puppets from old socks or small brown paper bags.
3. Put out plastic rabbits in the block area and encourage the children to build shelter for them.
4. Use rabbit cookie cutters with playdough.
5. Make a bunny salad with a pear for the body, a marshmallow tail, raisin eyes and cheese stick ears.
6. Find possible rabbit homes on the play yard.
7. Discuss the fact that cottontails do not "tame" to become pets. They should not be captured or picked up...even young ones. Domestic rabbits, however, make nice play yard or schoolroom pets.

THE BUNNY HOP

DID YOU KNOW? Rabbit tracks show the long footprints of the rabbit's hind feet in front of the small prints of the front feet. The rabbit touches the ground with his front feet first, then swings its hind feet up past the front feet before touching the ground. This activity will make the children aware of how rabbits move.

YOU'LL NEED: A picture of rabbit tracks and the rabbit animal card.

WHAT TO DO: Show the children the picture of the rabbit tracks and the rabbit animal card. Point out why they are unusual and discuss how the rabbits get their back feet in front of their front feet.

Demonstrate to the children how a rabbit hops. Put on some lively music and let them practice doing the bunny hop.

SUPPLEMENTARY ACTIVITIES:

1. Go on a "bunny hop" walk in the play yard.
2. Make bunny pictures with cotton balls and construction paper.
3. Serve a lettuce salad for snack and let the children pretend to be rabbits while they eat it.
4. Make rabbits out of large and miniature marshmallows with raisin eyes and carrot ears.
5. Make construction paper rabbit ears.

WHAT HATCHES FROM AN EGG?

DID YOU KNOW? Birds, reptiles, fish, insects and spiders hatch from eggs. Only a few mammals hatch from eggs. This activity will help children learn about animals who hatch from eggs.

YOU'LL NEED: The animal cards, one *Leggs* panty hose "egg" for each child, a small and large styrofoam ball for each child, construction paper, pipe cleaners, crayons, scissors and glue.

WHAT TO DO: Ask the children if they can think of an animal that hatches from an egg. Discuss their answers. Show them the various animal cards of animals that hatch from eggs. Discuss how animals like rabbits, raccoons, dogs, cats, and people are born alive.

Help the children make birds from the styrofoam balls and other art materials. Be sure to keep them small enough so they will fit into the eggs. Put the birds into the eggs and let the children build nests on the play yard with grass cuttings. Discuss how the mother bird sits on the egg to keep it warm until it hatches. Encourage the children to be the mother bird and sit on their eggs.

SUPPLEMENTARY ACTIVITIES:

1. Sort the animal cards according to which animals hatch from eggs and which do not.
2. Visit a hatchery.
3. Hatch some fertile chicken eggs in an incubator in the classroom.
4. Display pictures of animals that hatch from eggs.
5. Bring in different types of egg shells and display them in the science area.
6. Look for a bird nest outside that has eggs in it but do not disturb the nest, eggs, or adult. Observe the progress on alternating days.
7. Read the book *What's Inside?* by May Garelick, William R. Scott, Inc.; New York, NY, 1970, to the children. This book shows photographs of an egg hatching.

MOTHER BIRD

DID YOU KNOW? Mother birds care for their young and teach them how to fly, get food, etc. This activity will help children understand how the mother bird keeps track of her young.

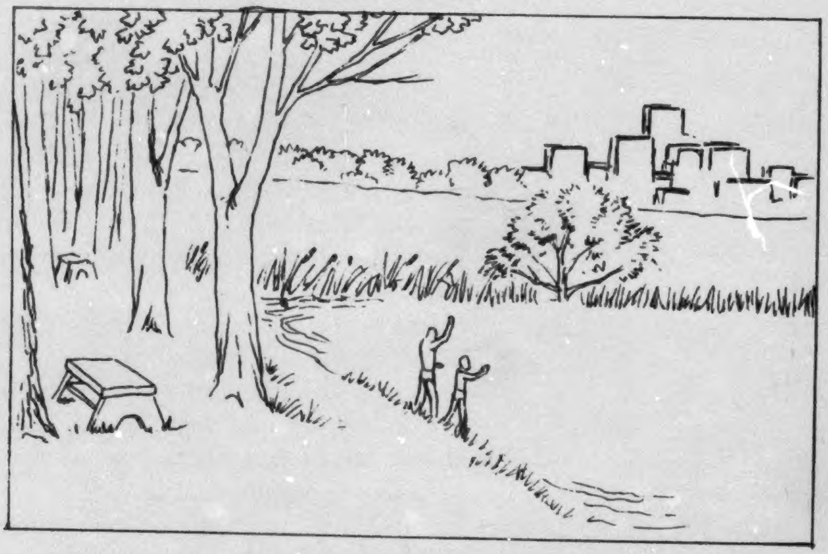
YOU'LL NEED: A large space with lots of hiding places.

WHAT TO DO: Pick one child to be the mother bird. All the rest of the children are the babies. Have the mother bird hide its eyes while the babies hide. When the mother bird opens its eyes the babies "peep" softly until they are found and brought back to the nest.

SUPPLEMENTARY ACTIVITIES:

1. Encourage the children to choose a particular type of bird they want to be...like a bluebird or turkey.
2. Let the children pretend to be other animals as well as birds. They might be raccoons and cry softly or kittens and meow softly.
3. Display pictures of mother and baby animals.
4. Have a family pet and her young come for a short visit.
5. Put out mother and baby animals in the block area and encourage the children to build nests or homes for them.
6. Visit a farm where baby animals such as calves, chicks, kittens, puppies, rabbits, pigs, horses, etc. are being born or raised.
7. Make a matching game where the children match pictures of mother animals with their young.
8. Encourage the children to pretend to be mother and young animals. They can act out how the mother teaches her young to hunt, hide from predators, etc.
9. Read the book *The Baby Cardinal* by Ellen Galinsky, G.P. Putnam's Sons; New York, NY, 1977, to the children. Illustrated with black and white photographs, this story is about a baby cardinal who is startled and falls from his nest. He spends hours looking and calling for his parents until they finally find him.

OUTDOORS IN MISSOURI—SUMMER



The month of June marks the beginning of summer...warm, sunny days and pleasant evenings. Summer vacations for school children heralds a long awaited break from routine. Family vacations also begin in June. It is a time of picnics, Father's Day gatherings, garden cultivation, and fishing trips. The sun reaches its northern-most arc on June 21st—the longest day of the year—and the true beginning of hot days to follow.

The offspring of wildlife enter the perilous days of growth and survival. Quail and turkey are hatching, little balls of fluff scurrying after guardian adults to find insects within hours of hatching. Insect life is in full swing. Insects find tender leaves to devour and fragrant flowers, wild and domestic, to visit. They have a succulent food supply that would, for the time being, seem inexhaustible. The many songbirds and game birds, young and old, help keep the growing population of insects in check in a complex and dynamic summer food web.

As the celebration of Independence Day arrives on July 4, farmers in Missouri mark important steps on their calendar. Wheat crops are usually harvested by the 4th, and corn crops should be "knee-high" and cultivated. Haymaking is in full swing, a second cutting usually completed by early July.

July is the time for summer baseball games, family picnics, and fishing trips. As Missourians are busily engaged in summer activities, wildlife populations are growing. Conservation Agents, rural mail carriers, and wildlife biologists spend early morning hours listening to bird calls and observing wildlife activities to establish a wildlife census. Summer wildlife population indicators provide important data to be used later in establishing hunting seasons and limits and to aid in other management decisions.

The aquatic world has reached a summer stabilization level by mid to late July. Dragonflies, frogs, and water striders add a sense of serenity to Missouri ponds and lakes.

By August, the young of most mammals and birds exist in a self-sufficient lifestyle similar to their parents. Some species produce large numbers: female rabbits may be nursing their fourth or fifth litter of the season. Turkey poults, on the other hand, are only about one-third the size of the hen...chicken-size but important additions to the summer production of turkeys. Food is abundant for all species from the predator to the seed- and leaf-eating herbivores.

The hot, sultry days of August cause a decline in activity among wild animals, plants and humans. Wild animals are most active at dawn and dusk. Many seeds have yet to mature. Trees, shrubs, crops and weeds have attained much of their annual growth. An anticipated change is needed and impending, much like the anticipation of spring heralded by the last snow storm of February. That change is just around the corner—in September... Outdoors in Missouri.

POSTER GUIDELINES

The summer poster emphasizes "urban" and "park" land-use activities. A very significant portion of our land is occupied by urban land-use patterns. Most Missourians live and work in an urban setting. Land committed to urban land-use is changed drastically from a "natural" setting but is necessary for jobs and living space. A clean and well-maintained urban setting has its own beauty and many Missourians prefer it to more natural, rural settings.

Parks provide a break in the urban landscape, to the benefit of many Missourians and wildlife species. Adaptable species of wildlife find habitat requirements in many parks and residential yards.

Human activities emphasized in the summer poster include fishing, swimming, picnicking and the ever-present baseball game. For many young children, these activities can be beneficial in forming a first experience that will lead to an appreciation of natural surroundings.

This poster will be very useful in comparing land-use patterns throughout the year. The summer activities depicted in the poster, familiar now, will kindle fond memories in January and February...Outdoors in Missouri.

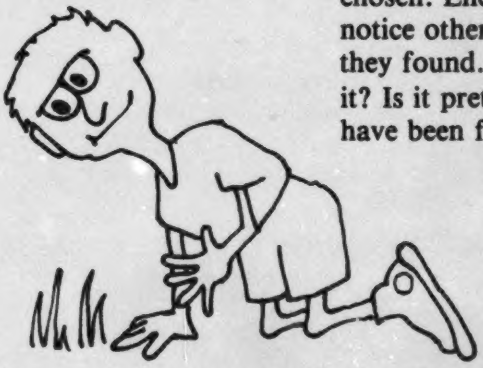
LISTEN TO THE GRASS GROW

DID YOU KNOW? There are many things going on outdoors that we usually see, hear, and smell but disregard. This activity will help the children become more aware of the sights, sounds and smells of the world around them.

YOU'LL NEED: An outside area where the children can lay on the ground and relax. Several items that the children will be able to easily find in the area, such as: leaves, acorns, feathers, wildflowers, blades of grass, etc.

WHAT TO DO: Gather children outside and explain that they're going on a listening hunt. Have everyone lay on the ground and pretend to be part of the earth. Some of the children may allow their bodies and faces to be covered with dry grass or twigs so they actually look like the ground. Be sure to have them close their eyes as you place the grass over their faces so dirt won't get in their eyes. Warn the children beforehand that bugs live and crawl on the ground and may crawl over them. Explain that they must be quiet and blend in with their surroundings if they want to hear and see things. Tell the children that you will give a signal when everyone can get up. Be careful not to make it too long but long enough so that everyone will be able to see, hear and smell something. After giving the signal, begin a discussion of the sounds they might have heard. Draw their attention to sounds in the area. Did they hear birds? Were there cars or trucks nearby? Could they hear the grass growing? Discuss how it felt to be part of the earth. What kinds of things did they see? Did bugs crawl on anyone? How did it feel? Where was the bug going? What did the children smell? Could they smell the grass, trees, birds, garbage, etc.?

After discussing sights, sounds, and smells, lay out four or five items easily found in the area. Explain to the children that this is a nature hunt and you want them to find things like yours. Give the children plenty of time to look and find the items you have chosen. Encourage them to help one another find things and to notice other things of interest. Discuss with the children the items they found. Discuss the purpose of each item. Does an animal eat it? Is it pretty to look at? Show the children other items that have been found in the area that may be of interest.



SUPPLEMENTARY ACTIVITIES:

1. Try this activity in several different settings, such as: the school play yard, a city park, a farm and a natural area. Discuss the sights, sounds, and smells unique to each of these areas and how these fit the land use man has chosen.
2. Make a tape of sounds from each of these areas for the children to listen to in the classroom. Use the seasons posters to remind them of the different types of land use.
3. Make a "feely box" for the children to put their hands into and feel different nature objects, without looking at them. Have them describe the object and guess what it is before looking at it.
4. Read the book *The Listening Walk* by Paul Showers, Thomas Y. Crowell; New York, NY, 1961, to the children. Points out sounds that a young child hears on a silent walk with his father.

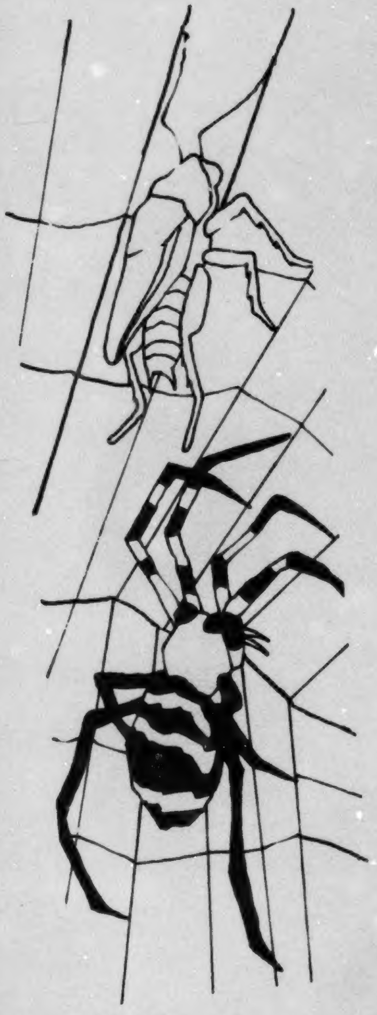
WHAT HAS EIGHT LEGS?

DID YOU KNOW? A spider is not an insect but an arachnid as are mites, ticks, scorpions and daddy longlegs. The spider has eight legs instead of six and no antennae (feelers), or wings. Spiders have poor eyesight so they must rely on their sense of touch. All spiders are helpful to man because they eat lots of insects such as flys, mosquitoes and gnats. This activity will help children become more aware of the value of spiders and how they help man. It will also help them become aware of the differences between spiders and insects. (Caution: Some spiders can cause painful bites.)

YOU'LL NEED: The garden spider animal card, a dead spider, a dead insect, a magnifying glass, egg cartons that have been cut apart and pipe cleaners.

WHAT TO DO: Show the children the animal card of the garden spider. Discuss with them the number of legs it has and other physical features. Stress how a spider is different from an insect. Show them a dead spider and a dead insect. Allow the children to examine them under a magnifying glass to note the differences between them. Discuss with the children how spiders move and allow them to pantomime the movement. Ask questions about where baby spiders come from, what spiders eat, where they live, etc. Explain to the children that spiders have poor eyesight and must rely on their sense of touch to get around. Discuss how spiders help man by eating insects. What would it be like if there weren't any spiders?

Help the children make spiders from egg cartons that have been cut apart. Pipe cleaners can be used for legs. Allow the children to paint or color their spiders as they wish. Also, make some insects and talk about how they are different.



SUPPLEMENTARY ACTIVITIES:

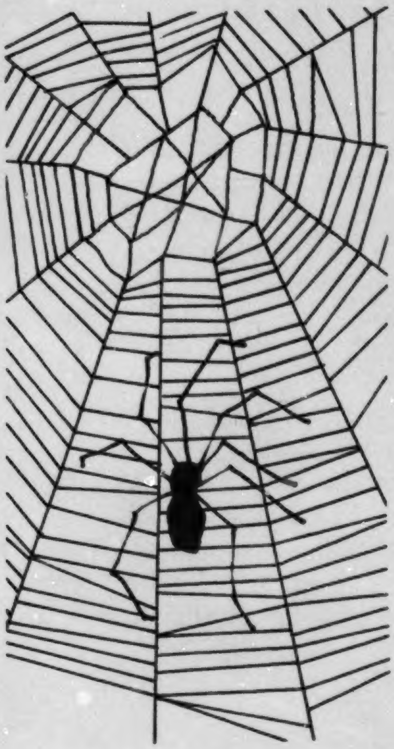
1. Sing "The Itsy Bitsy Spider" and do the motions. Also sing "The Great Big Spider" in a loud, low voice with exaggerated motions and "The Teeny, Tiny Spider" in a soft, high voice with tiny motions.
2. Bring in a daddy longlegs and let the children watch him for several days.
3. Make spider puppets from old gloves with which the children can play.
4. Sort the animal cards according to each animal's number of legs.
5. Make "spiders" for snack with large marshmallows and toothpicks.
6. Read the book *The Web in the Grass* by Berniece Freschet, Charles Scribner's Sons; New York, NY, 1972, to the children. It illustrates how a spider spins a web to catch food, what the spider eats, who the spider's enemies are and how the spider reproduces.

SPIDER WEB PAINTING

DID YOU KNOW? The mother spider is bigger than the father spider. The mother spins a large web and cares for the babies. The spider has a poison fang on each side of its mouth but most spiders are not poisonous to man. Spiders don't have jaws like insects so their food must be soft enough to suck. The web has a sticky surface that holds a bug entangled in it until the spider comes to kill it. After killing its food, the spider wraps it in a silken sac to be eaten later. This activity will help children better understand how spiders get their food and the purpose of the spider's web.

YOU'LL NEED: A can of spray paint (not laquer), white drawing paper and a spider web.

WHAT TO DO: Take the children for a walk in the woods to look for a spider web. The spider usually makes the web between branches of bushes or trees or between two growing things. Stand so the wind is blowing away from you and spray the web quickly with a back and forth motion with the spray paint can about an arm's length away from the web. Cover the web with a thin coating of paint so that it looks like beads on all web strands. Curve the edges of the drawing paper backward from the center and touch the center of the paper to the web first. Then straighten out the paper very carefully along the edges until the entire web touches the paper. Let it dry and display it in the classroom.



Talk with the children about how the spider uses the web. Ask if any of them have ever walked into a spider web in the forest or garden. How did it feel? Discuss what spiders eat and how they must soften their food.

SUPPLEMENTARY ACTIVITIES:

1. Observe a spider in a garden or woods for several days.
2. Have the children look for spider webs in the classroom, on the playground and at home. Discuss their findings. If possible, take the whole class to observe.
3. Make a spider web in the classroom by having the children be spiders and string yarn around the room for their webs.
4. Encourage the children to make spiders, webs and insects from playdough and act out the spider's eating process.

TRASH COLLAGE

DID YOU KNOW? Littering is more than just cluttering the ground with paper, cans and bottles. It is unwise use of our natural resources, some of which are limited. It also affects our environment—litter changes the environment and makes the outdoors less pleasant. This activity will help children become aware of what littering does to the environment as well as suggesting alternative ways to use the litter.

YOU'LL NEED: A littered area, a grocery bag for each child, drawing paper and glue.

WHAT TO DO: Give each child a grocery bag and explain that you're going on a litter walk. Explain the boundaries of the area you plan to clean up and let the children pick up all the litter they can find. After the children have cleaned the area, discuss how different it looks. Talk with them about how the litter changed the environment and made it ugly.

Help the children make collages from the litter they collected. Talk about the litter they collected; where it came from, what it was used for, why it was discarded, etc. Talk about where the litter should have been placed. Ask the children if they have ever littered. What would happen if everyone littered and no one ever cleaned it up?

SUPPLEMENTARY ACTIVITIES:

1. Put out clothes in the housekeeping area so the children can dress up like garbage men to pick up trash.
2. Put up a bulletin board picture of an outdoor scene, then tack litter from outside all over it. Discuss the change.
3. Make a garbage truck from a large box for children to drive around and collect garbage.
4. Allow children to clean up their own messes after routine activities such as art, snack, washing hands, etc.
5. Encourage the children not to waste paper (e.g., use both sides) and other materials at school or home.
6. Read the book *The Wump World* by Bill Peet, Houghton Mifflin Company; Boston, MA, 1970, to the children. It is a story of how litter and pollution change the Wump World.

LET'S RECYCLE

DID YOU KNOW? People make choices every day that affect our environment. We waste food and materials which deplete our natural resources. Only by learning to use our resources wisely will we be able to truly practice conservation. This activity will help children understand the meaning of "recycle."

YOU'LL NEED: Newspaper, a mixing bowl, an egg beater, one piece of 4" x 4" screen for each child, a 4" block of wood, cornstarch, plastic bags, a shallow pan, water and a tablespoon.

WHAT TO DO: Explain to the children how paper is made. Trees are cut down, hauled to the mill and the wood chips are processed into paper. This takes lots of energy. Paper can also be made from used or recycled paper. This saves energy and our natural resources. Have children tear newspaper into tiny pieces and put them in the mixing bowl. Add about 2 cups of water and let it sit for about an hour. Beat this mixture with an egg beater until it becomes creamy. Dissolve 2 tablespoons of cornstarch in a pint of water. Add this to the creamed mixture and mix well. Pour a small amount of this mixture into a shallow pan. Have the children hold the screen flat and dip it into the pulp mixture until it's about 1/10" thick on the screen. Then place the screen on a newspaper, cover it with a plastic bag and press down with a wood block. The water will filter through the screen onto the newspaper. Allow the recycled paper to dry about 24 hours, then peel it away from the screen.

During the process of this activity discuss other things that can be recycled—cans, glass, rubber, etc. Talk with the children about things that they recycle at school such as egg cartons, milk jugs, styrofoam cups and packing, old clothes, etc.

SUPPLEMENTARY ACTIVITIES:

1. Use the children's recycled paper to make a special card or gift.
2. Visit a recycling plant.
3. Bring in examples of recycled paper products.
4. Let children examine recycled paper and new paper under a magnifying glass.
5. Show the film "*Meecology*," available from your conservation education consultant.

PHEW!

DID YOU KNOW? Cars give off pollution even during a short trip around the block. This activity will help children see the pollution emitted by cars.

YOU'LL NEED: A car, a clean, white piece of cloth and a heavy rubber band.

WHAT TO DO: Show the children the clean white cloth. Discuss what they think will happen if it is tied to the exhaust pipe of a car. Attach the cloth securely over the exhaust pipe of the car with a rubber band. Start the car and drive it around the block. Take the cloth off the exhaust pipe and look at the dark spot that has been made. That's pollution. Ask the children where pollution from cars goes when there are lots of cars. Discuss what can be done to cut down on pollution, such as: don't drive cars, drive smaller cars, car pool with other drivers, fix cars so they don't give off as much pollution, etc.

SUPPLEMENTARY ACTIVITIES:

1. Talk with the children about other forms of pollution (noise, litter, water, etc.)
2. Discuss and look for other causes of air pollution such as smokestacks and rubbish fires.

WHAT LIVES IN THE CREEK?

DID YOU KNOW? Fish, frogs, turtles, tadpoles, crayfish, snakes, bugs and many types of plants live in Missouri creeks, streams, ponds and lakes. Most Missouri waterways are a haven for wildlife. Raccoons, beavers, muskrats, minks, ducks, geese, etc., live near the water. The plants and animals living in the water provide food for each other and for many animals who live nearby. This activity will help children understand what lives in Missouri creeks, streams, ponds and lakes. It will also introduce the concept of food chains.

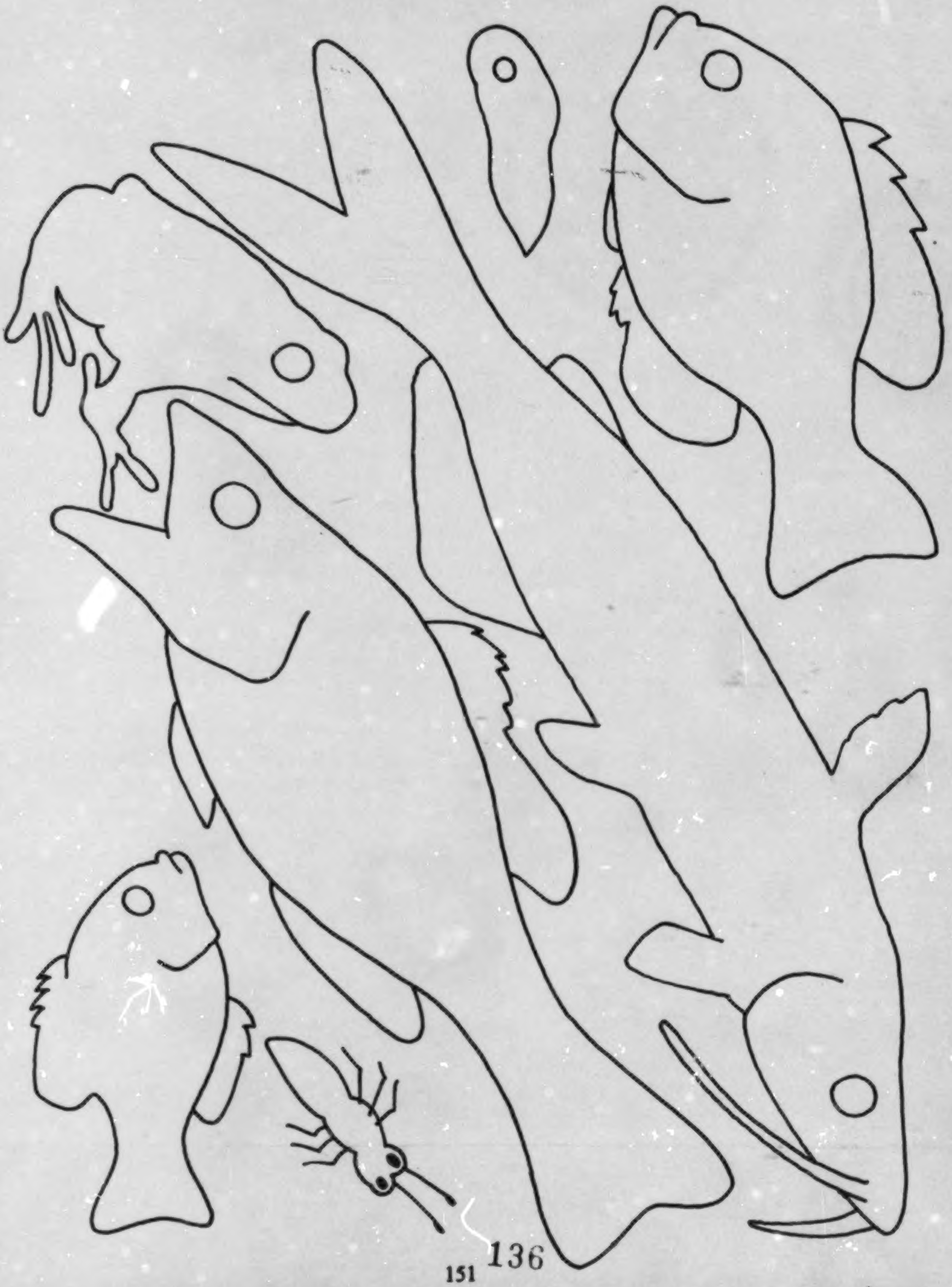
YOU'LL NEED: Flannel board characters and a flannel board.

WHAT TO DO: Ask the children if they know what lives in the creek. You might choose a creek nearby to talk about and actually hold the discussion outside near the creek. If a creek is not easily accessible, explain to them that a creek is like a very tiny river. As the children name the things that may be living in the water put each one on a creek on the flannel board. Talk about what each eats, where in the water it lives, how it gets around in the water, how it gets food, etc. Discuss how some of the animals eat other animals and demonstrate this with the flannel board pieces. Talk about which things in the creek man might eat. Let the children play and experiment with the flannel board pieces.

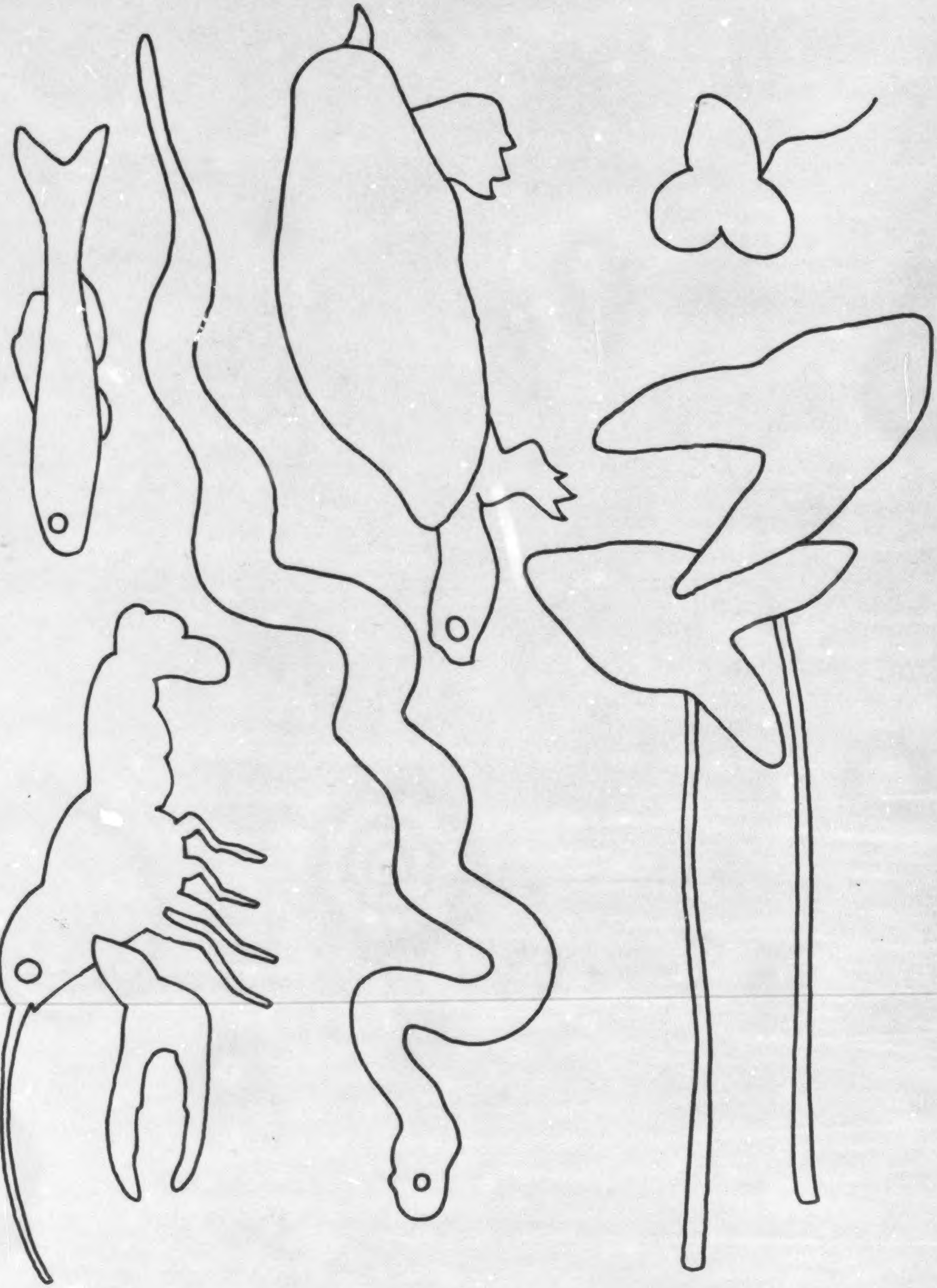
SUPPLEMENTARY ACTIVITIES:

1. Use the animal cards and sort them according to which animals live in the water and which live on land.
2. Use the animal cards and discuss the animals who live near the creek and why they need the creek.
3. Make creek pictures with pictures of fish and other plants and animals who live in the water or have the children draw their own.
4. Let the children pantomime the various animals and plants who live in the water.
5. Tell portions of the "Consy Coon" books *The Little Stream* and *Meet My Neighbors* available from the Missouri Department of Conservation.
6. Collect some of the animals from a creek and keep them in an aquarium in the classroom for a day so the children can observe them.

WHAT LIVES IN THE CREEK?



WHAT LIVES IN THE CREEK?

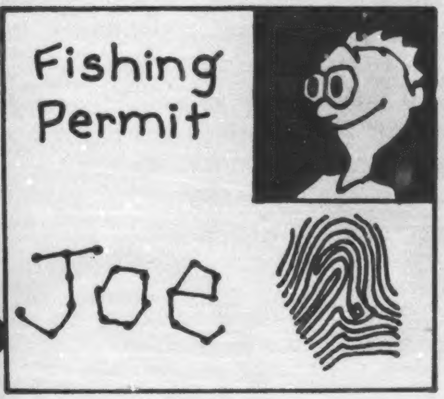


FISHING PERMITS

DID YOU KNOW? Everyone in Missouri between 16 and 64 who fishes in state waters must have a fishing permit. These permits help the Conservation Department keep track of the number of fishermen in Missouri and the revenue from these permits help pay for the management of state lakes and streams. This activity will help the children to be aware of the need for fishing permits as well as introducing them to the conservation agent.

YOU'LL NEED: Stamp pad,,crayons, licenses, magazines, scissors, and glue.

WHAT TO DO: Ask the children if they know what a fishing permit is. Compare it to a drivers license. Are they supposed to drive without a license? In a way fishing is like driving, they need a license or permit to do it. Who checks their drivers license? A policeman. A conservation agent is like a policeman. He watches out for all the fish and wildlife in Missouri. He is a good friend like a policeman. He makes sure people obey the laws regarding wild animals and fish. He makes sure that people have a permit when they fish. If he finds someone who fishes without a permit, he writes them a ticket just like a policeman writes tickets for driving without a license. Conservation agents do many other things besides writing tickets. All of their duties help fish, wildlife, forests and the people who enjoy them.



After discussing fishing permits and conservation agents, have the children make their own fishing permits. Help them to write their name on the permit. If the child is unable to write his/her name use connect the dots. Dot their name for them and let them write it by connecting the dots. Have the child cut out a picture of a child and glue it on the license and put his/her thumbprint on the permit.

SUPPLEMENTARY ACTIVITIES:

1. Put out conservation agent dress-up clothes, such as a hat, shirt with a patch on the sleeve, ticket books, etc. Put out lots of billfolds and purses to keep the permits in.
2. Do this activity for hunting permits during deer, turkey, quail and squirrel seasons.
3. Visit a state wildlife area or lake where the children might see a conservation agent.

LET'S GO FISHING

DID YOU KNOW? Fishing is a sport enjoyed by many people in Missouri. There are many different kinds of fish and other wildlife in Missouri creeks, streams, lakes and ponds which are fun to catch. However, the Missouri Wildlife Code determines which of these and how many of each may be kept by fishermen. This activity will help the children become aware of some of the rules concerning fishing in Missouri. The activity will also give them a taste of the fun they can have fishing.

YOU'LL NEED: Sticks, string, magnets, paper clips, construction paper or cardboard fish, turtles, crayfish, snakes, frogs, tires, tin cans, and trash (use the patterns from "What Lives in the Creek?").

WHAT TO DO: Show the children the summer poster and point out the people fishing. Ask if any of them have ever been fishing. Talk about what kinds of things they might catch if they were to go fishing. Talk about which of these things would be all right to keep and which should be turned loose. Explain to the children about throwing the little fish back into the water so they can grow big or feed the bigger fish. Talk about keeping only what you intend to clean and eat.

Attach about an arm's length of string to each stick. Tie a magnet to the end of the string. This will represent a fishing pole with the magnet as a hook. Each of the construction paper items should have a paper clip attached to one end so that it can be caught with the magnet hook.

Set up the fishing activity in a large area. A large box can be used for a boat or the children can build one with blocks. Limit the number of children who can be in the boat at one time. This can be done by only having a certain number of fishing poles available. Talk with them about what they catch and what they should do with their catch.

SUPPLEMENTARY ACTIVITIES:

1. Pretend to cook the fish in the housekeeping area. Have empty containers of cornmeal, oil, butter, flour, etc. available so that the children can choose their own ingredients and method of cooking.
2. Have the children measure the fish as they catch them to determine whether or not the fish can be kept. Put a limit on the smallest length to be kept before beginning the activity so that the children will not be confused.
3. Serve sardines for snacks. Talk about what kind of fish they are and where they live.
4. Bring some live fish into the classroom for the children to observe for a short time.
5. Take the children to a lake to fish.

JOE'S CHOICE

DID YOU KNOW? Conservation means wise use of natural resources. There are three aspects of conservation: preservation, restoration and management. All three are conservation practices but the situation determines which aspect should be used. This activity will introduce the term "conservation" to the children and demonstrate the three aspects or levels of conservation. More information about levels or aspects of conservation can be found in a publication available from the Department of Conservation titled *An Ecological Approach to Conservation Education.*

YOU'LL NEED: Flannel board characters and a flannel board.

WHAT TO DO: Read the children the following poem.

You should be able to readily identify stanzas that deal with restoration, preservation and management.

Joe caught a bunch of fish
from his fishing lake.
He took them home for dinner
and he made a big fish cake.

He ate the cake, UM!, it was good.
And catching fish was fun.
So he went to catch some more,
just as fast as he could run.

But the fishing lake was fished out.
He'd caught every single one.
No more fish to catch and eat.
What can be done?

Joe then bought some fish.
He put them in his lake.
Then he went and caught the fish
and made another cake.

Again his lake was fished out.
He said "What can I do?
I fished until there's no more fish.
BOO-UH-UH!"

So once again he bought some fish.
But before he did he thought,
"I'll put these fish into my lake
and then I'll sit and watch."

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Joe sat and watched his lake
to see how his fish would do.
But every time the fish jumped,
Joe's stomach jumped too!

"I like to watch the fish," said Joe
"but I like to eat them too.
How can I catch a fish
and leave the lake a few?"

So Joe began to fish again
but he only kept a few.
He'd let the smaller fishes go
and just keep one or two.

The smaller fish they grew and grew.
The bigger ones, Joe ate.
Joe's lake was full of fish
and the fishing there was great.

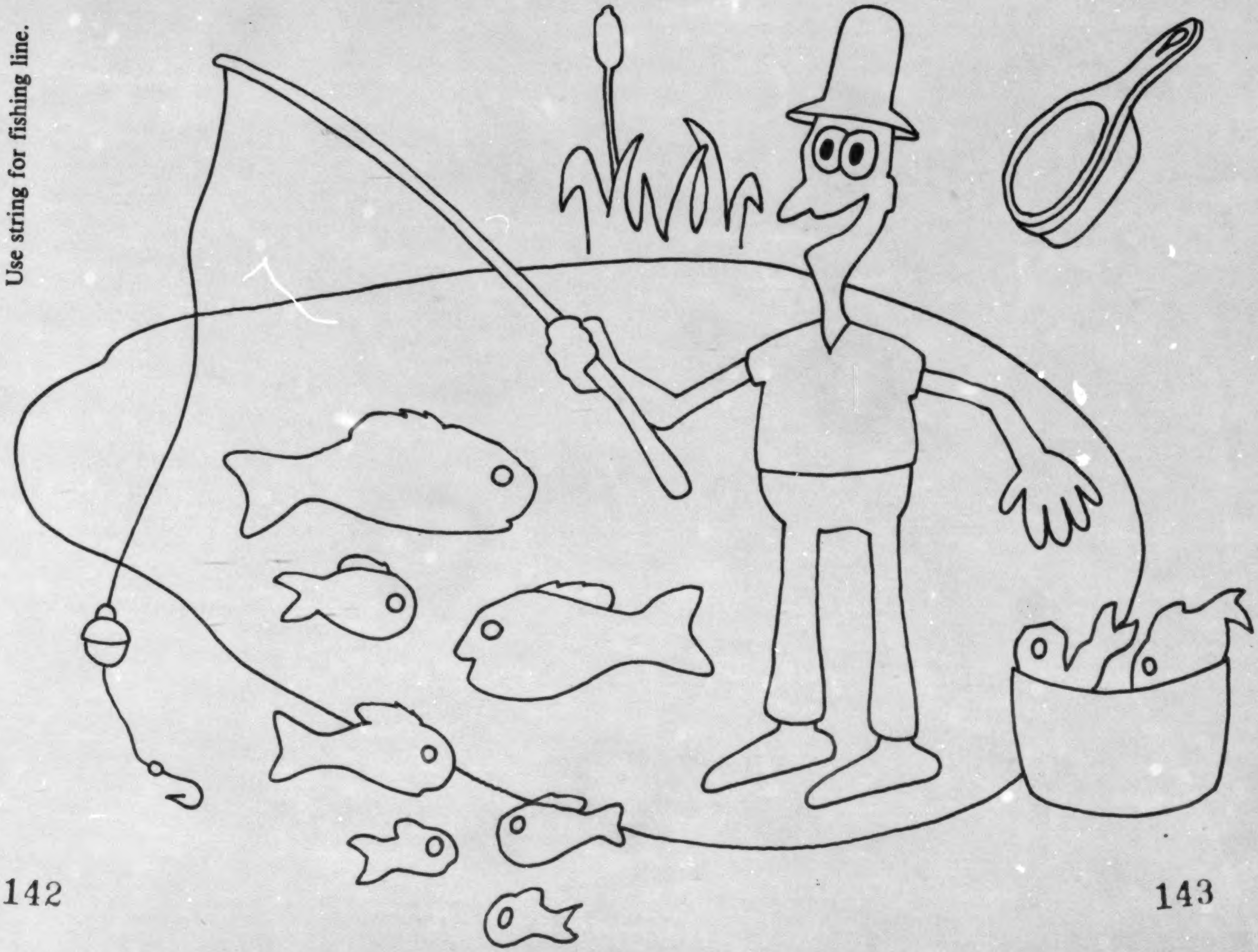
by John Griffin

After reading the story discuss with the children the word "conservation." Talk about what would have happened if Joe had not practiced conservation. Discuss the three aspects of conservation Joe practiced and which one worked the best.

SUPPLEMENTARY ACTIVITIES: Divide the children into two groups. Set up the fishing activity (Let's Go Fishing) and let half of the children catch all the fish they want and keep them. Then let the second group of children fish. Talk about what happens. Did all the children catch an equal share of fish?

JOE'S CHOICE

Use string for fishing line.



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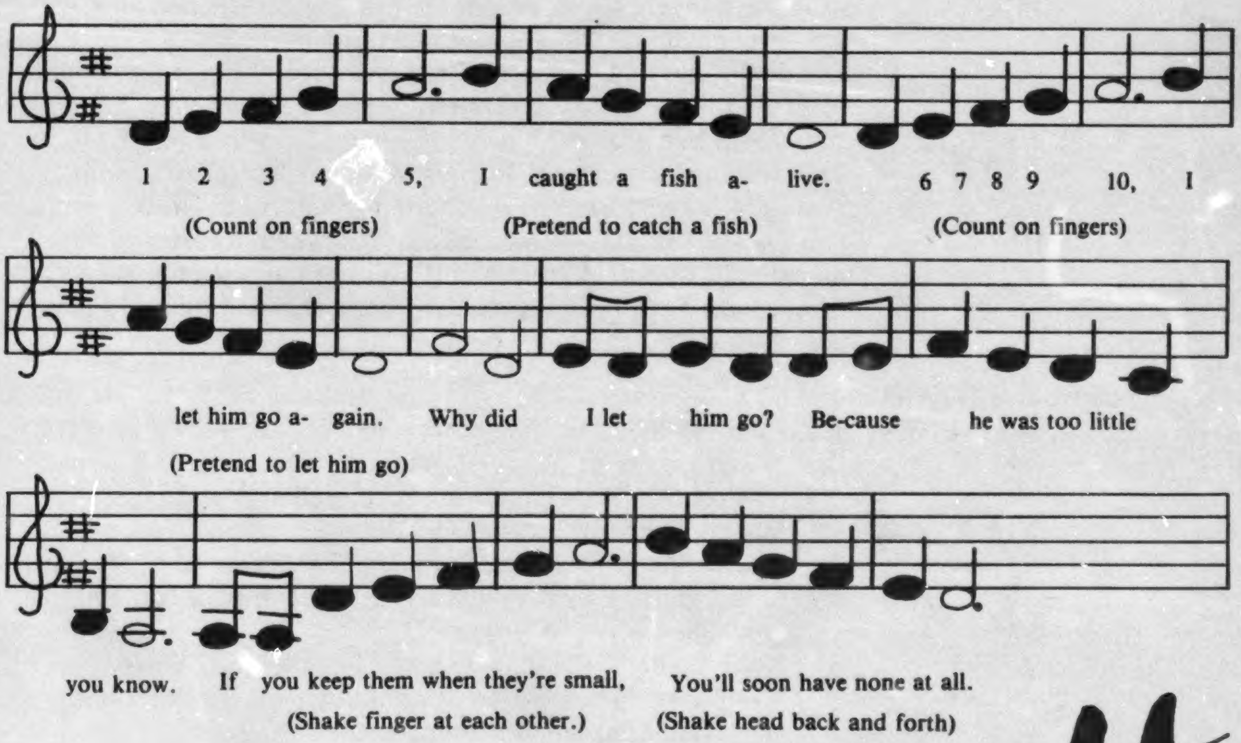
FISH SONG

DID YOU KNOW? Good management of fish in Missouri waters depends on the fishermen. When a fish is caught that is too small he should be released so that he can grow larger. This activity will make children aware of what happens when little fish are not released back into their habitat.

YOU'LL NEED: A group of children ready to sing.

WHAT TO DO: Teach the children the following song with the motions:

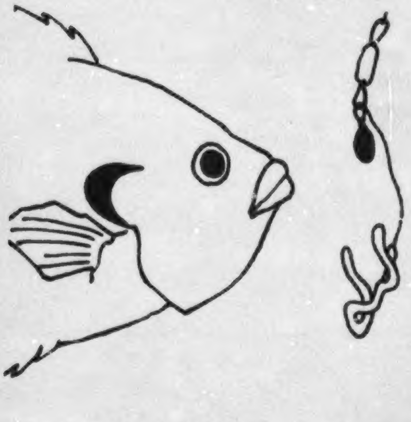

1 2 3 4 5, I caught a fish a- live. 6 7 8 9 10, I
let him go a- gain. Why did I let him go? Be-cause he was too little
you know. If you keep them when they're small, You'll soon have none at all.

(Count on fingers) (Pretend to catch a fish) (Count on fingers)

(Pretend to let him go)

(Shake finger at each other.) (Shake head back and forth)

SUPPLEMENTARY ACTIVITIES: Visit a fish hatchery.



FOXES AND RABBITS

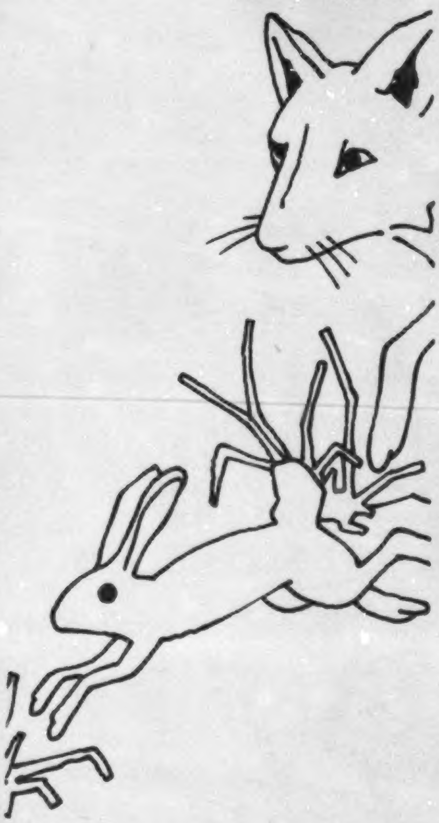
DID YOU KNOW? Animals that eat and hunt other animals are called predators. The animals they hunt are called prey. This activity will help the children to understand the relationship between predators and prey.

YOU'LL NEED: A large outside area where the children can run. Rabbit ears and tails and fox ears and tails made from construction paper.

WHAT TO DO: Talk with the children about the meaning of predator and prey. Discuss how a predator must be very sneaky and fast in order to catch his supper. The prey must be looking for the predator all the time so that he will not be caught and eaten for supper. Divide the children into two groups and give one group the rabbit ears and tails and the other group the fox ears and tails. Have all the "foxes" (predators) hide their eyes and slowly count to 10. The "rabbits" (prey) will hide while the predators are counting. After reaching 10, the "foxes" look for and try to sneak upon and tag the "rabbits." Once tagged, the prey have been eaten and should sit on the ground and wait until all the prey have been eaten. Then have the children trade ears and tails and play the game again.

SUPPLEMENTARY ACTIVITIES:

1. Help the children name other predators and prey animals.
2. Match the animal cards of predators with prey. Talk about how some of the animals are both predators and prey.
3. Make a predator/prey poster.
4. Discuss the proportional numbers of predator and prey types in the wild. Many prey animals must be present for few predator animals to survive.
5. Read the book *Eat and Be Eaten* by Iela Mari, Barron's; Woodbury, NY, 1980, to the children. It is a picture book of animals chasing smaller animals.



FOOD CHAINS

DID YOU KNOW? The food chain shows that every person and animal is dependent on other plants and animals for their food. This activity will help children understand the food chain concept and its importance.

YOU'LL NEED: Construction paper, scissors, glue, and pictures of plants and animals.

WHAT TO DO: Make a construction paper chain with four or five links in it. Glue pictures of plants and animals on the chain. These should be in order of what they eat. For example, the first link would be a picture of some type of plant. Then the next link could be a grasshopper. A frog could follow the grasshopper. The chain could end with a person linked to the frog.

Show the chain to the children and discuss how each animal depends on the one on the link in front of it. Ask the children what would happen if there weren't any grasshoppers. Demonstrate how this would affect all the other animals by tearing out the grasshopper link.

Help the children make food chains to take home with them.

SUPPLEMENTARY ACTIVITIES:

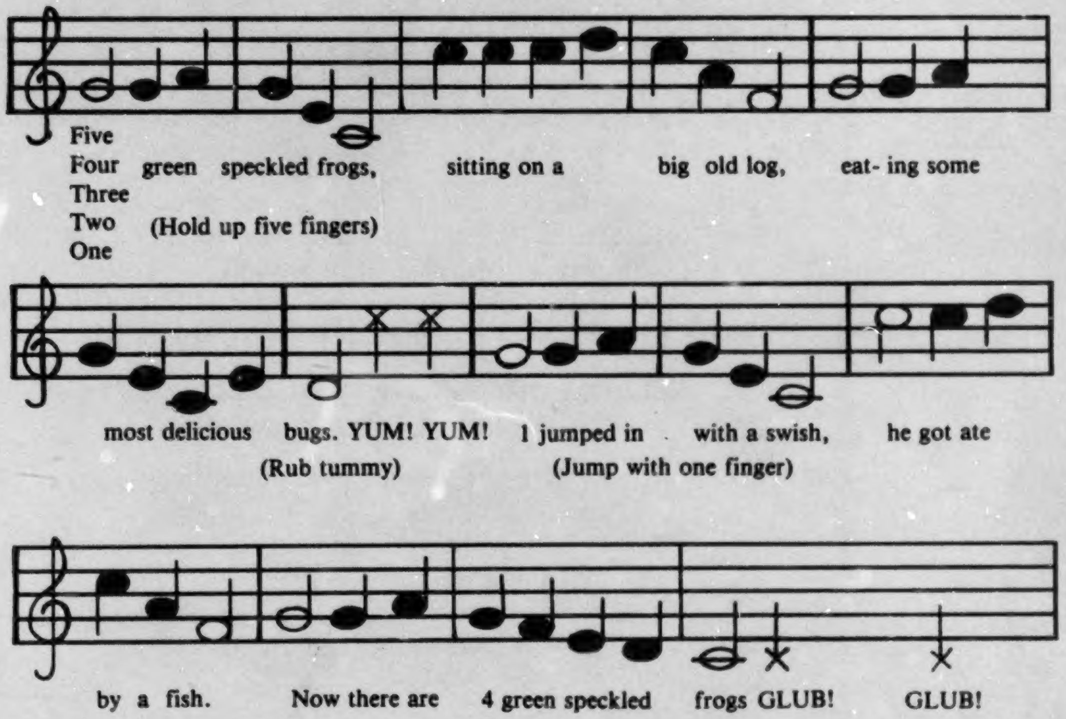
1. In the housekeeping area put out play food of plant and animal products.
2. Discuss where the various food items came from during lunch or snack time.
3. Visit a farm and talk about the plants and animals farmers grow to feed people and animals.

FIVE GREEN SPECKLED FROGS

DID YOU KNOW? Animals must get their food by feeding on other plants and animals. This activity will help children to better understand the food chain.

YOU'LL NEED: A group of enthusiastic children.

WHAT TO DO: Teach the children the following song:


Five
Four green speckled frogs, sitting on a big old log, eat- ing some
Three
Two (Hold up five fingers)
One
most delicious bugs. YUM! YUM! 1 jumped in with a swish, he got ate
(Rub tummy) (Jump with one finger)
by a fish. Now there are 4 green speckled frogs GLUB! GLUB!
3 (Hold up four fingers)
2
1
no

SUPPLEMENTARY ACTIVITIES:

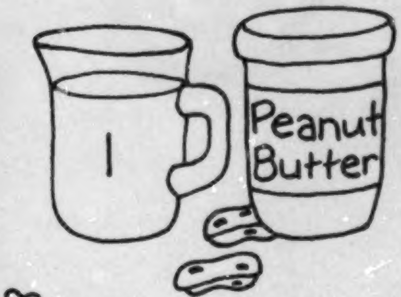
1. Bring a frog in for the children to observe for a short time. Help them catch bugs or worms to feed the frog.
2. Have children pretend to be frogs, bugs and fish.

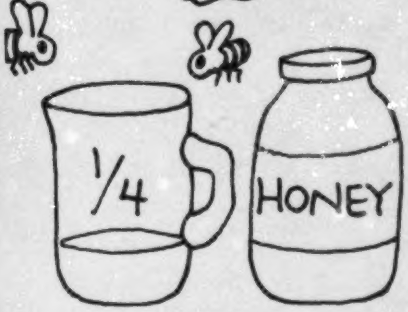
PEANUT BUTTER PLAYDOUGH

DID YOU KNOW? Man can get food from animals without eating the animal itself. This activity will allow children to experience some of the foods man gets from plants and animals. It will also give the children the opportunity to pretend to be predators.

YOU'LL NEED: Peanuts, a blender, oil, honey, honeycomb, a dead bee or a picture of a bee, powdered milk, measuring cups, a large bowl and a large recipe card.

WHAT TO DO: Talk with the children about peanuts and where they come from. Put the peanuts in a blender with a little oil and grind into peanut butter. If a blender is not available, bring in some peanuts and peanut butter. Let the children discuss what must be done to the peanuts to make them into peanut butter. Discuss how and where peanuts grow. If available, show the children a peanut plant or a picture of one.





Show the picture of the bee. Ask the children how many of them have ever seen a bee. Ask if they know what bees eat. Show them the honeycomb and talk about how the bees store honey in a comb in their hive (home). The honey is food for the winter.

Show the children the large recipe card with the recipe for peanut butter playdough on it. Let the children taste each ingredient as you make the playdough. Discuss each ingredient and where it came from.

1 cup peanut butter
1/4 cup honey
Add enough dry milk to keep it from being sticky

SUPPLEMENTARY ACTIVITIES:

1. Visit a bee hive and see how honey is processed.
2. Discuss other foods man gets from plants or animals. Make a matching game where the children match the plant or animal with its product. For example, cows and milk; pigs and bacon; sunflowers and sunflower seeds; chickens and eggs; bees and honey; etc.
3. Put out bee-keeping equipment made from nylons and hats, gloves and coveralls.
4. Make bees from spools, build hives for them with blocks and put out plastic flowers.

ROCK COLLECTION

DID YOU KNOW? The earth's crust is made up of rocks and rock material. We dig it, tunnel through it, and build on it. All plants, animals and people live on it. The earth's crust forms three-tenths of the entire surface of the earth, the rest is covered by water. This activity will help make children aware of rocks and their importance.

YOU'LL NEED: An egg carton for each child and an outdoor area with lots of interesting rocks.

WHAT TO DO: Ask the children to collect interesting rocks in their egg cartons. Label the carton with the child's name and where the rocks were collected. Discuss how rocks make up an important part of the earth and how man lives on rock. Talk about the fact that soil is just ground up rocks. Compare the rocks the children have collected.

SUPPLEMENTARY ACTIVITIES:

1. Match rocks of similar size, color, shape or texture.
2. Compare wet rocks and dry rocks.
3. Explore the play yard to find new rocks after a hard rain.

ROCK PAINTING

DID YOU KNOW? Rocks are made up of minerals. Usually they contain more than one mineral. This activity will help children realize that not all rocks are alike.

YOU'LL NEED: Several different types of rocks, paint, paint brushes, and newspapers.

WHAT TO DO: Have the children paint on rocks. Discuss how the paint soaks into some of the rocks and not into others. Talk with the children about the texture of the different rocks and how the texture determines whether or not the paint soaks in. Discuss the fact that rocks are made up of minerals.

SUPPLEMENTARY ACTIVITIES:

1. Look at rocks under a magnifying glass.
2. Display different types of rocks in the science area.
3. Have children match rocks merely by feeling them.

WHAT IS A MINERAL?

DID YOU KNOW? A mineral is a naturally occurring substance that is neither animal nor vegetable. This activity will give children a better understanding of what a mineral is and how man uses minerals.

YOU'LL NEED: A gold chain, a piece of silverware, a silver coin, a mirror, a copper penny, a copper pipe, a zinc pipe, salt, and an aluminum can.

WHAT TO DO: Talk with the children about how we get minerals from rocks in the earth. Some minerals are very valuable to man. Show the children the gold chain. Discuss where the gold came from and how it was heated and molded into a chain. Then ask the children how many have been to the dentist. Discuss silver and how dentists use it to fill teeth. Show them the silver fillings in your teeth and pass around the mirror and let the children look in their mouths to see if they have any fillings. Talk about other things made from silver, such as silverware and coins. Show the children the copper penny and pipe. Ask if they know from what mineral each is made. Talk about where copper comes from and how man makes it into pennies and pipe. Continue in the same manner with the zinc pipe, salt, and the aluminum can. Discuss what man would do without these minerals. What will happen when there aren't any minerals left in the earth? Does this mean we should stop using them now? No, man should learn to use them wisely without waste. Discuss the fact that minerals are a resource or present from the earth.

SUPPLEMENTARY ACTIVITIES:

1. Look at minerals under a magnifying glass. Discuss how the salt crystals look almost like a diamond.
2. Label objects made of minerals that are in the room.
3. Put out mining clothes in the housekeeping area.
4. Use picks and shovels in the sandbox and dirt pile with which the children can pretend to mine. Bury large rocks deep in the sand for them to find.
5. Visit a quarry or mine.

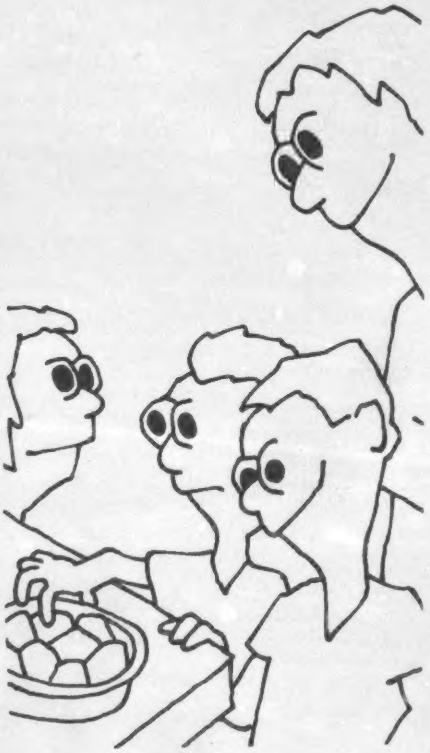
CRYSTAL GARDEN

DID YOU KNOW? Minerals were formed when the earth cooled down millions of years ago. Each kind of mineral has its own crystal pattern in lots of different sizes and shapes. This activity will help demonstrate to children how minerals are formed.

YOU'LL NEED: Six charcoal briquets, an aluminum pie plate, a measuring cup, liquid bluing, salt, ammonia, a jar with a lid and four colors of food coloring (avoid smelling or touching the ammonia).

WHAT TO DO: Explain to the children that minerals were formed in the earth a long, long time ago. Now we are going to grow some in the classroom. Help the children place the six charcoal briquets in the aluminum pie tin. Measure 1/4 cup salt, 1/4 cup bluing and 1/4 cup ammonia into the jar and mix thoroughly. Put a different color of food coloring on four of the briquets. On the fifth briquet, put all the colors and don't put any on the sixth. Pour the salt mixture evenly over the briquets. The crystals will begin to grow very soon. Mix up more of the salt solution and pour over the garden every two days to keep it growing.

SUPPLEMENTARY ACTIVITIES: Look at the garden under a magnifying glass.



CONCRETE HAND PRINTS

DID YOU KNOW? Concrete is made up of water and different kinds of rocks and minerals. This activity will show children one way man uses rocks and minerals.

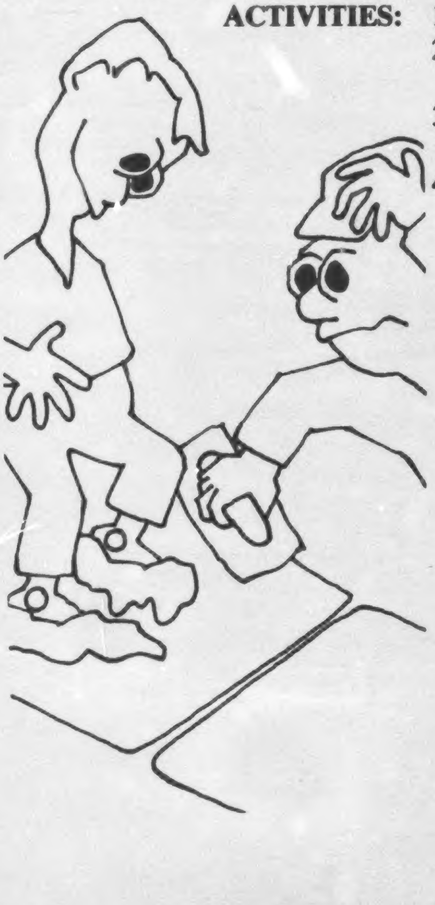
YOU'LL NEED: A small paper plate for each child, sand, cement, water, a dish pan of soapy water, paper towels, and an old bucket.

WHAT TO DO: Talk with the children about how man makes concrete from rocks and minerals. Ask if any of them have ever seen a truck pouring concrete. Discuss how man uses concrete. Name things in your school and on the playground and parking lot made of concrete.

Mix 4 parts sand to 1 part cement. Add enough water until the mixture is the consistency of cookie dough or thick pudding. Put a small amount on the childrens' paper plates and have them flatten it out and put their hand print in it. Have each child wash his/her hands immediately following the activity as the lime in the concrete will burn if left on the skin too long. After the concrete dries, the children can paint or stain their hand prints.

SUPPLEMENTARY ACTIVITIES:

1. Visit a site where workers are pouring concrete.
2. Put out coveralls in the housekeeping area for the children to pretend to be concrete truck drivers.
3. Put out toy trucks in the block area for the children to pretend to mix and pour concrete.
4. Read the book *Building a House* by Byron Barton, Greenwillow Books; New York, NY, 1981, to the children. It demonstrates steps in building a house.



ANIMAL WRAPPERS

DID YOU KNOW? Many animals have coverings over their bodies that are different than that of people. This activity will help children realize that many animals have coverings different than people.

YOU'LL NEED: Several examples of animal coverings, such as: feathers, scales, wool, other furs, leather, etc., and a dishpan of water.

WHAT TO DO: Discuss with the children how some animal skins are different from that of people. Compare examples of animal coverings with the children's skin. Examine both under a magnifying glass. Find out which are water-repellent by putting them in water and determining which shed water more readily. Discuss similarities and differences. Discuss the meaning of "water-repellent."

SUPPLEMENTARY ACTIVITIES:

1. Sort animal cards by their type of covering.
2. Discuss with children how each animal's covering helps it. For example: feathers help birds fly, fur keeps raccoons warm, etc.
3. Bring in dress-up clothes made from animal coverings, such as hats with feathers, fur coats, hide jackets, leather purses and shoes, wool sweaters, felt hats, etc. Discuss how people use animal coverings for their clothing. Talk about how people made clothing out of animal hides when there were no clothing stores.

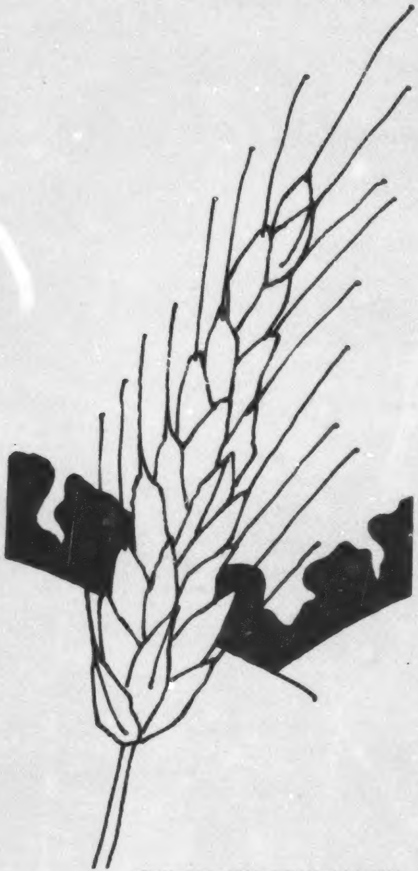
HARVEST TIME

DID YOU KNOW? Wheat is an important food for animals and people. This activity will help children identify food products made from wheat and enable them to see and taste it in its raw form. Wheat is a form of "domestic grass."

YOU'LL NEED: Several wheat plants (entire plant, including roots), flour, baking powder, salt, cream of tartar, sugar, butter, milk, a large bowl, measuring cups and spoons, a cookie sheet, a biscuit cutter, and a large recipe card for the children to read.

WHAT TO DO: Show the children the wheat plants. Ask them if they have seen such plants growing in fields. Discuss the term harvest and how farmers gather the wheat and store it for the winter. Show them the harvest in the fall poster. Explain that although most crops are harvested in the fall, wheat grows in the winter and spring, and is harvested in the summer. You will need to obtain your wheat plants before July 1. Ask if the children can think of anything made from wheat. Flour is ground-up wheat. Let the children taste wheat kernels and then the flour. Discuss how differently the kernels and flour look and taste. Ask the children if they can think of anything made from flour.

Explain to the children that you are going to make biscuits. Show them the recipe card and discuss each ingredient as you add it. Let the children mix the ingredients and knead the biscuits. Cut them out and bake them on the cookie sheet.



SUPPLEMENTARY ACTIVITIES:

1. Eat honey with the biscuits and discuss how honey is made.
2. Put out a dishpan of flour for the children to use.
3. Put out farmer dress-up clothes (overalls, caps, and bandannas) in the housekeeping area.
4. Display pictures of various types of tractors.
5. Visit a farm where wheat is being harvested.
6. Use farm animal cookie cutters to cut out biscuits. Discuss why the farmer has each animal and how each animal helps man.

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EARLY CHILDHOOD EDUCATORS REQUEST FORM

NAME: ______________________

Mailing Address: ______________________

____

______________ Zip: ________

Date: ______________________

School: ______________________

District: __________ County: __________

No. of Students: ______________________

( ) Preschool

( ) Kindergarten

Please check (✓) the items requested.

- ( ) "Conservation Seeds" Program Material
- ( ) Wildlife Code of Missouri
- ( ) Winter Birds
- ( ) Counting on Conservation Poster
- ( ) Song Bird Poster & Guidebook
- ( ) Game Bird Poster & Guidebook
- ( ) Mammals Poster
- Mammal Leaflets:
  - ( ) Beaver
  - ( ) Bobcat
  - ( ) Cottontail Rabbit
  - ( ) Coyote
  - ( ) Fox
  - ( ) Mink
  - ( ) Mountain Lion
  - ( ) Muskrat
  - ( ) Opossum
  - ( ) Raccoon
  - ( ) Skunks
  - ( ) Squirrels
  - ( ) White-tailed Deer
  - ( ) Woodchuck
- ( ) Conservation Education for Nursery, Headstart and Kindergarten
- ( ) Animal Autographs
- ( ) Placing American Wildlife Management in Perspective
- ( ) An Ecological Approach to Conservation Education
- ( ) Teachers' Guide to School Yard Eco Areas
- ( ) Invite Wildlife to Your Backyard
- ( ) Missouri Trees
- ( ) Conservation Trees and Shrubs for Missouri
- ( ) Missouri Toads and Frogs
- ( ) Missouri Turtles
- ( ) Snakes and Facts About Them
- ( ) Missouri Fishes
- ( ) Charlie Chipmunk Story Book
- ( ) Meet My Neighbors Story Book
- ( ) Little Stream Story Book

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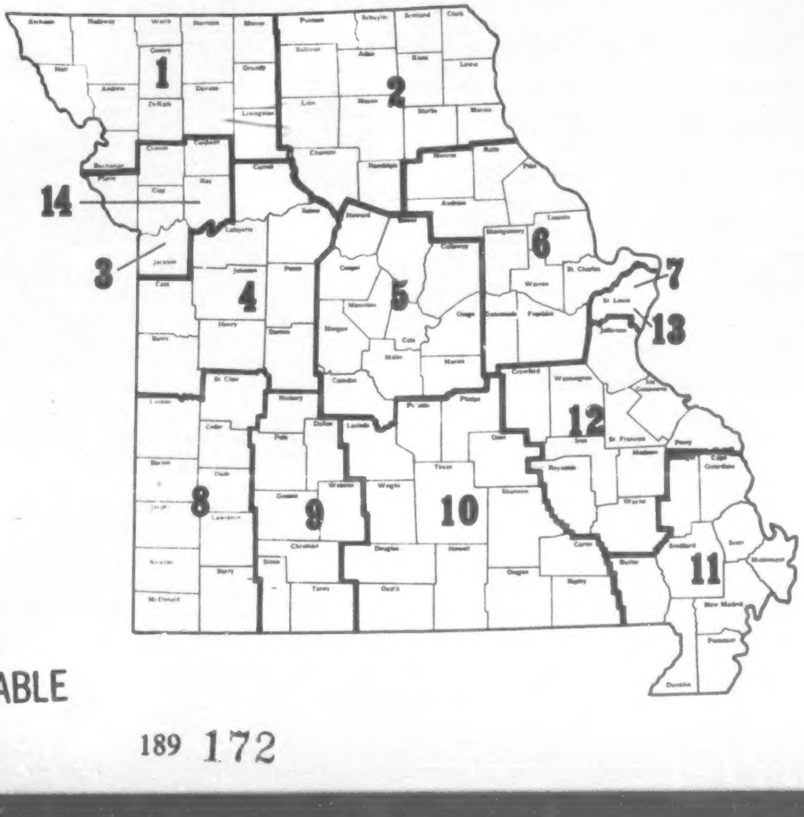

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